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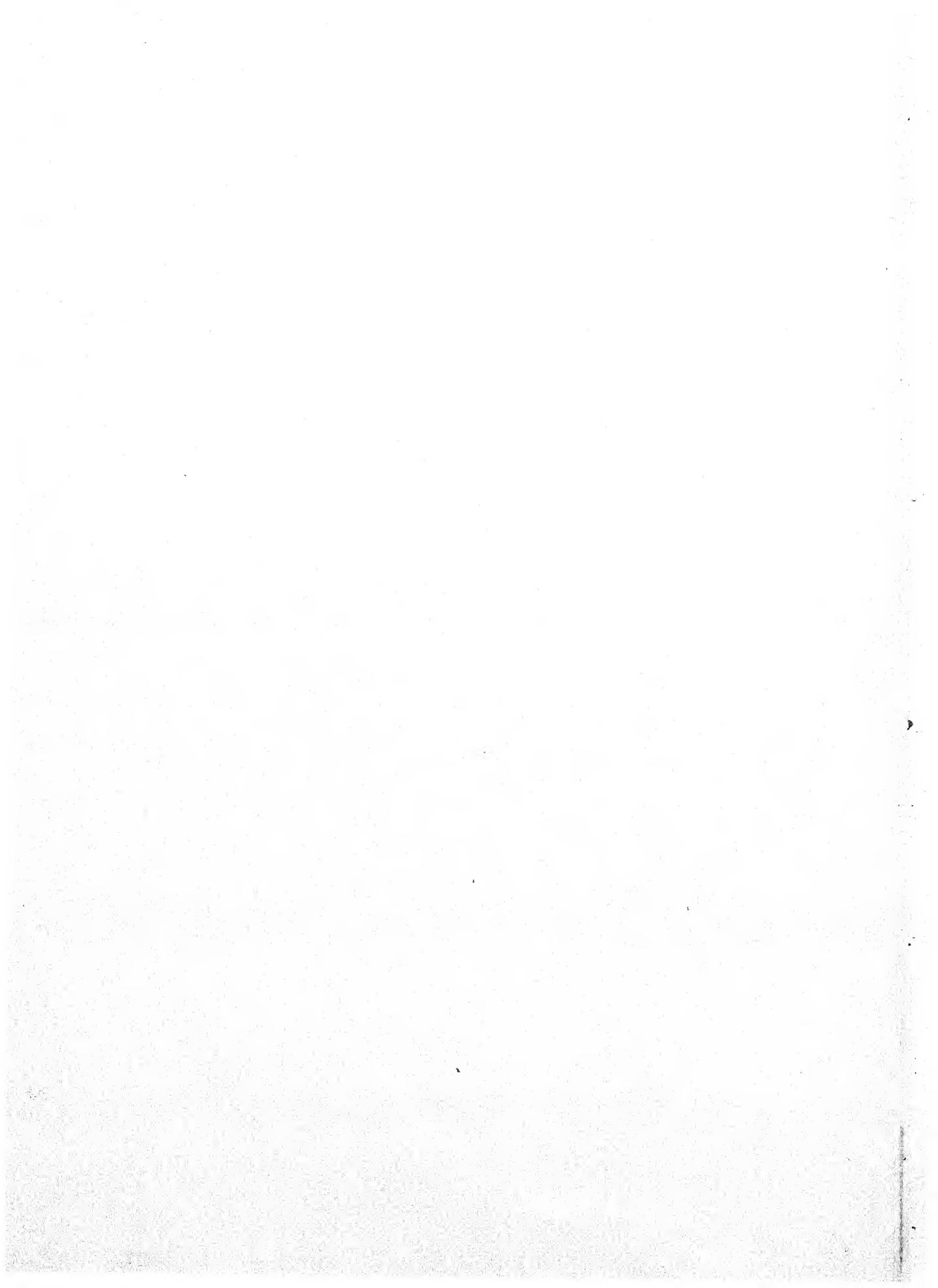
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University of Michigan Studies

HUMANISTIC SERIES

VOLUME XXXI

ANCIENT TEXTILES FROM EGYPT IN THE
UNIVERSITY OF MICHIGAN COLLECTION



ANCIENT TEXTILES FROM EGYPT
IN THE UNIVERSITY OF MICHIGAN
COLLECTION

BY
LILLIAN M. WILSON

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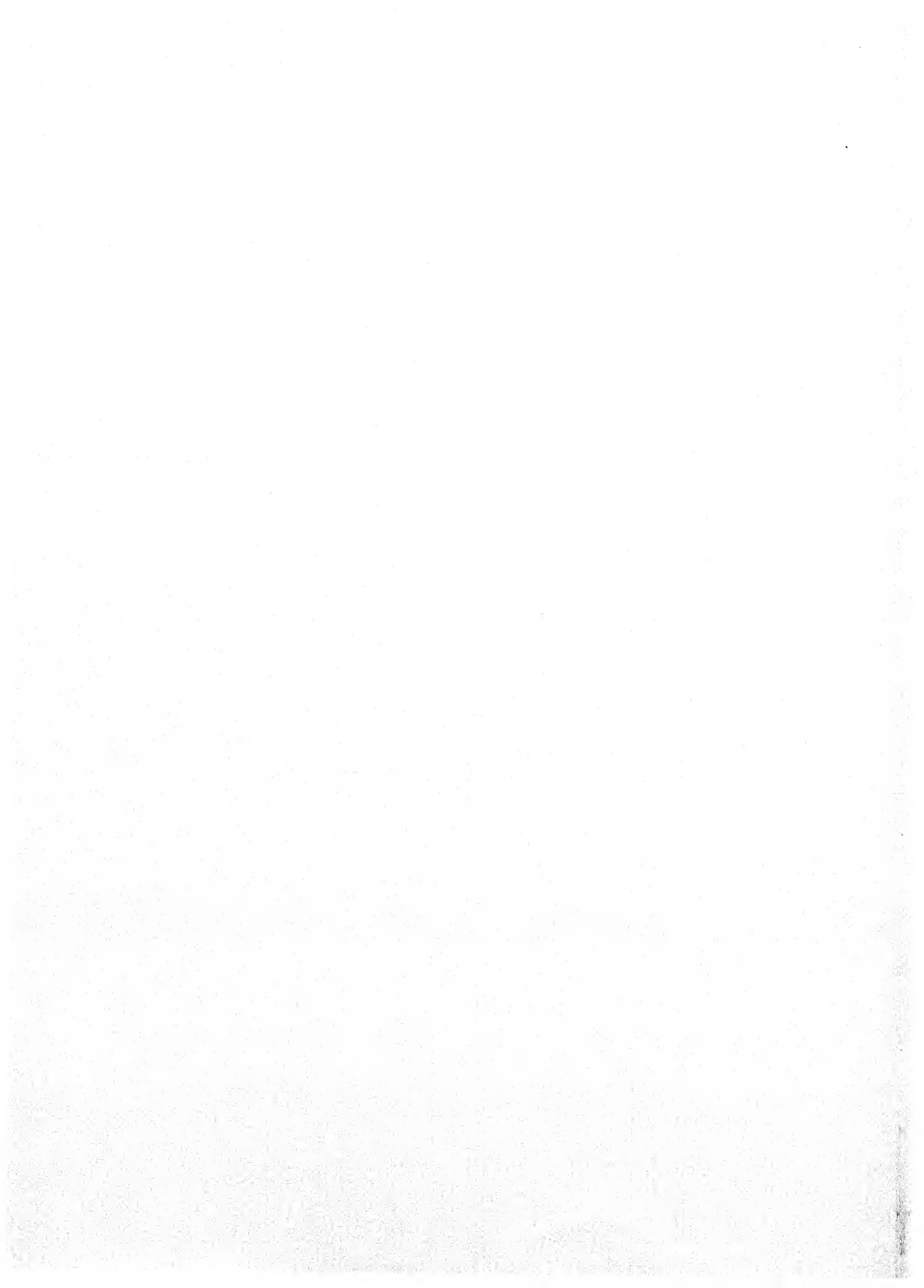
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FOREWORD

THE textiles presented in this volume belong to two unrelated collections. The book is, therefore, divided into two sections. Part I is a report on the fabrics of various types found in the excavations at Karanis, Egypt. Part II is a discussion of a collection which was acquired by purchase. All the specimens included in it are tapestries, except the four described in the final chapter.

Further details concerning the collections will be found in the Introduction to each section.

L. M. W.



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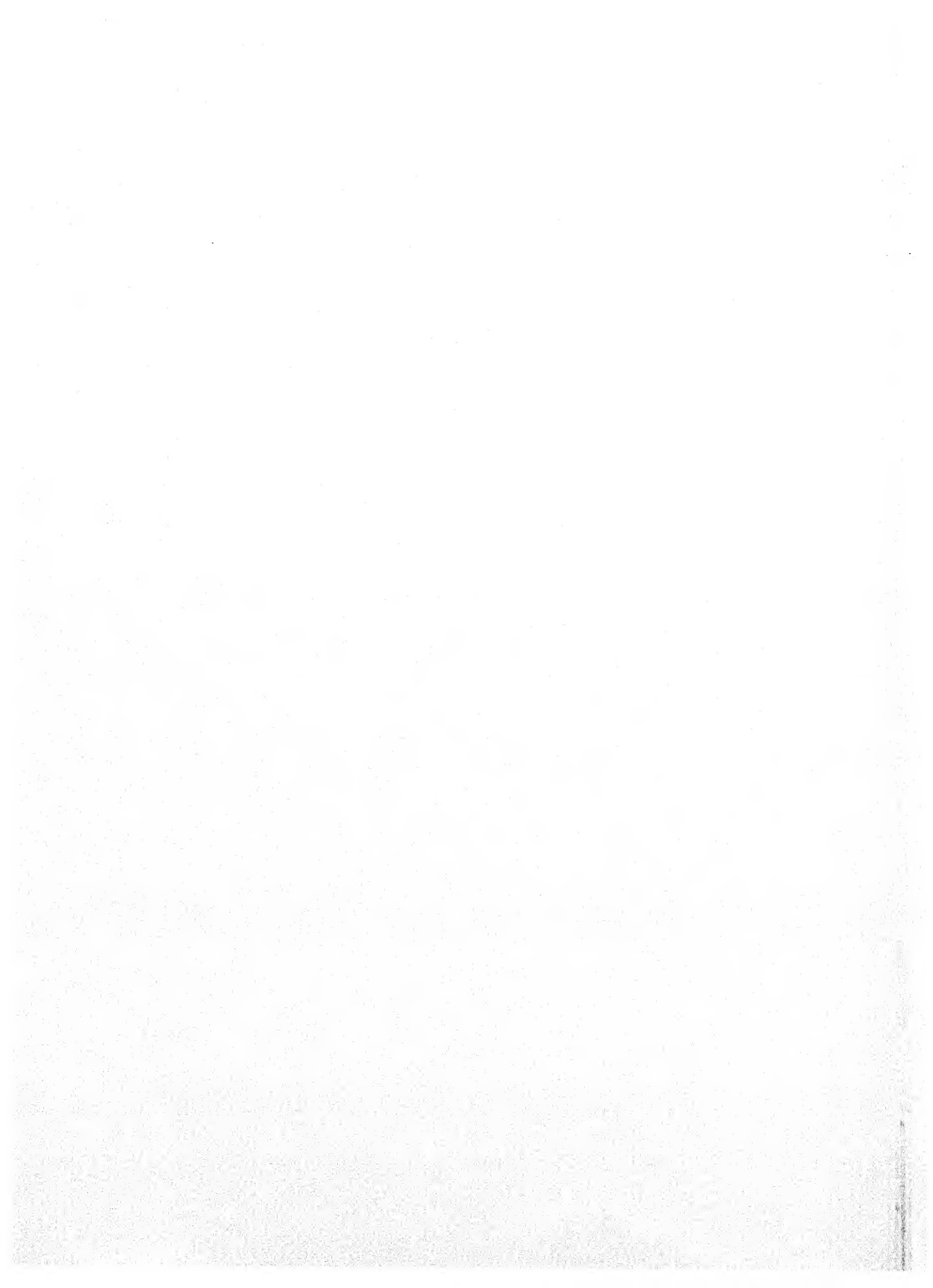
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PART I
TEXTILES FROM KARANIS

INTRODUCTION

THE pieces of cloth described or referred to in this report were found by the University of Michigan in the excavations at Karanis, in the Fayûm district of Egypt, in the years 1924-25 and 1925-26. They are all fragmentary. No whole garments were found, and only a few of the fragments can be identified as specific parts of garments.

In excavations in general the best specimens of textiles are found in cemeteries, but Messrs. Grenfell, Hunt, and Hogarth, who in their search for papyri conducted some excavations at Karanis in 1895-96, reported that the tombs had already been plundered. When the site was opened in 1924 by the University of Michigan Expedition the only textiles found were discarded scraps which had been thrown into refuse heaps in the streets and courtyards.

At the close of the 1925-26 campaign all the textile fragments were sent to Mr. Thomas Midgley of the Chadwick Museum at Bolton, England, who cleaned them and made a general classification and a catalog which, for the bulk of the collection, is sufficient for museum purposes. He was permitted to retain for the collection in the Chadwick Museum one specimen of all interesting fragments of which there were duplicates. The rest of the collection was then sent to the University of Michigan.

The collection is especially valuable for a study of ancient textiles because of the comparative certainty and exactness with which it can be dated. In many of the houses from which pieces of cloth were taken coins and papyri were found which furnish an approximate *terminus post quem*, not only for the houses containing these specific means of dating, but also for other houses of the same period and at the same level.

It was with this fact in mind that the selections for publication in this report were made; and because of this unusual feature the writer has been careful, perhaps meticulous, in recording details. She has also endeavored to make all descriptions intelligible to the layman as well as to the specialist.

CHAPTER I

ANCIENT LOOMS AND WEAVING

THE following chapters describing the textiles found at Karanis contain frequent references to the processes of weaving. For the better understanding of such passages a brief explanation of ancient looms is given.

In its simplest form weaving consists in passing one continuous thread (called the "weft") back and forth, at right angles, over and under each alternate one of a set of parallel threads called "warps" (or collectively, the "warp"). A loom on which such weaving could be done was perhaps the earliest of the more intricate mechanical devices, and only at long intervals were changes and improvements made.

Long before Karanis was founded the Egyptians had discarded their most primitive loom and had adopted a more efficient one. It consisted of two upright timbers connected at top and bottom by crossbeams, thus producing a rectangular frame, and (according to illustrations of it) so constructed that it stood free from the wall or other support.¹

The warps were attached to the crossbeams so that they were perpendicular to the floor. The lower beam was a sufficient distance above the floor to permit the weaver to sit at his work and begin his weaving on the lower ends of the warps or just above the lower crossbeam. The weft threads were beaten into place by a heavy wooden comb. In the weaving either the weft would need to be worked in by the fingers, over and under each alternate warp yarn — a slow process, but doubtless employed in the most primitive looms — or else the warps must be separated into two sets, which we shall call A and B, each composed of alternate threads. Then some method must be devised for

¹ See H. Ling Roth, "Ancient Egyptian and Greek Looms," *Bankfield Museum Notes*, Second Series, No. 2, Fig. 16.

A survival of this type of loom which the writer saw on the island of Naxos does not stand free from the wall, but leans against it exactly as does the primitive European loom described in a later paragraph.

drawing these two sets of warps apart to produce a "shed" or passage for the weft, and also a device for shifting the two sets back and forth, so that with its first passage the weft would lie in front of the A set of warps and back of the B set, and on the next passage (after the sets had been shifted) the weft would pass back of the A set and in front of the B set.

For definite information as to how the requirement described above was met, we must turn to survivals of primitive European looms. The earliest European loom of which we have illustrations consisted of two side beams connected at the top by a crossbeam to which the warp was attached. The lower ends of the side beams rested upon or were fastened to the floor. The upper ends, with the crossbeam, rested against the wall, so that the loom had an inclined position. The warps were not attached to the lower crossbeam, but were held taut by weights, usually of burnt clay, fastened to their lower ends. The weaver stood at his work and began his web on the upper end of the warp, or just below the upper crossbeam.

This type of loom was in actual use in Scandinavian countries until about two hundred years ago. One of the old looms is to be seen in the Reykjavik Museum in Iceland and another in Det Danske Kunstindustri Museum in Copenhagen. The manner of operating them is known with certainty.

The problem with which we are concerned — that of separating the warps to facilitate the passage of the weft — was the same on all upright looms, and its solution must have been similar if not identical in each case. The process employed on the Icelandic and Danish looms is illustrated by Figures 1 and 2, which are side elevations of a loom; *R-S* is one of the side or upright beams; *o* is the upper crossbeam. There is a lower crossbeam at point *d*. A projecting crotch, *v*, is attached to each of the side beams. The warp is attached to the crossbeam *o*. The crotches are movable, and there are holes at intervals in the side beams, so that they can be placed near the top when the weaver begins the web and lowered as the weaving progresses.

The B set of warps is brought down parallel with the side beams and passes over the lower crossbeam *d*, and the threads are held taut by the weights already mentioned. The A set is allowed to hang straight from the crossbeam *o*, and weights are fastened to the lower ends of the threads. At point *c*, a rod,

sometimes called a "leash" rod, rests on the projecting crotch and against the B set of warps. Attached to it are short cords equal in number to the warps in set A. These cords, called "leashes" or "heddles," each terminating in a loop, pass between

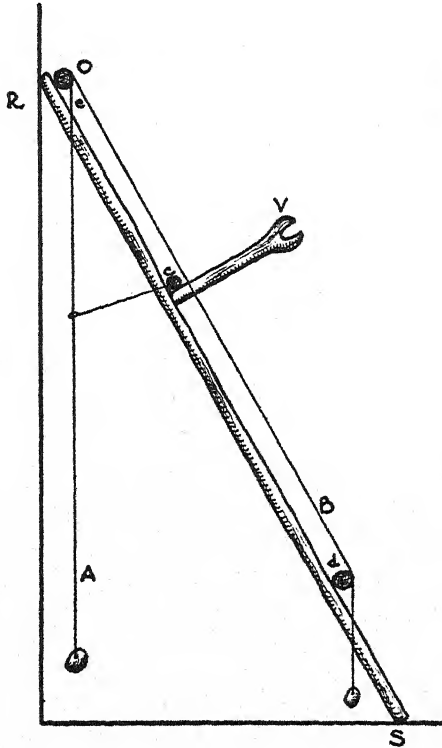


FIG. 1

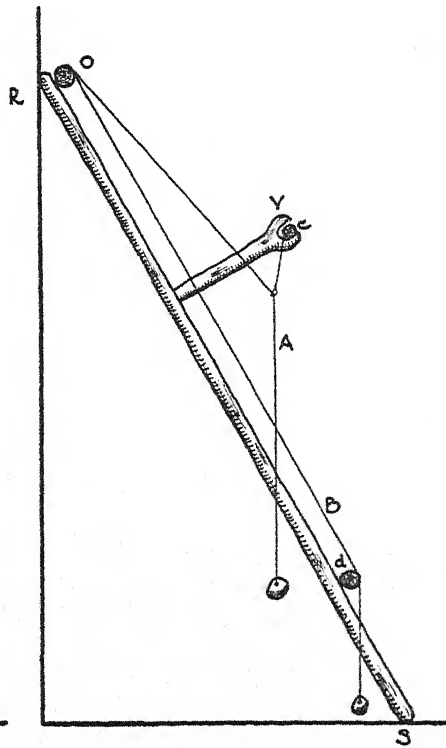


FIG. 2

Side elevations of a primitive loom

the warps of set B, and each warp of set A passes through one of the leash loops. (See Figure 1.)

The first weft passes between the two sets of warps at point *e*, back of the B set and in front of the A set. It is beaten up into its place by a long, slender wooden knife thrust between the warps. The relative position of the two sets of warps is then shifted by bringing the leash rod forward and placing it in the crotch, which puts the A set of warps into the position shown in Figure 2. The second weft then passes through the shed, this time in front of set B and back of set A. After it is beaten up the leash rod, which shifts the A set of warps, is returned to its original position and the process is repeated.

As the weaving progressed, the cloth could be wound up on

ERRATUM

The position of the leash rod, c , in Fig. 1 is incorrect.

It should be at the right of the line designated B instead of
at the left of it.

the upper beam, in order to keep the work at convenient height for the weaver. There is no provision for any extra length of warp, so that the web was necessarily a little shorter than the height of the loom.

Looms of the type of Figure 1 were regarded by the Romans of the classical period as among their ancient heritages;¹ apparently, at that time they were used only for the weaving of certain garments, such as the dress of the bride and the tunic of the *tirones*.

The loom in general use was an upright one of the Egyptian type. That this loom was provided with leashes is proved by a painting in the so-called Hypogeum, a tomb discovered in Rome in the year 1919, in which there is, or was,² shown such a loom with projecting crotches on the uprights and a rod, exactly as in Figures 1 and 2.

On this type of loom a little longer web might be woven than on the loom of Figure 1. On either loom the width was much less restricted, so that the greater dimension of the web was usually the distance between the two selvage edges, which, on modern fabrics, is the width of the cloth. Garments like the tunic were usually so woven that what we would call the width of the cloth made the length of the garment.

On either type of upright loom the sets of warp threads might consist of single alternate threads as described above or of alternate groups of two's or three's or more, with each group held on a single leash; and two or three wefts might also be woven through each shed. When the warps and wefts were both thus woven in groups a basket weave was produced.

Again, the sets of warps might be made up of single threads alternating with two, or two with three, producing a corded surface. Likewise, the wefts might be woven alternately single or double, making a corded or ribbed surface. In fact, any such combination was possible so long as the warps were controlled by a single set of leashes. The weaving was, therefore, of a simple

¹ Festus (Pauli Exc.), p. 364, s.v. *Regillis tunicis* (W. M. Lindsay's edition). This type of loom was used by the Greeks; because it appears in vase paintings representing scenes from the Odyssey it is now known as the Homeric loom. See Herodotus ii, 35, 3, for a comparison of the Greek and Egyptian looms and methods of weaving.

² This part of the fresco has almost disappeared, but photographs were made of it when the tomb was first opened. See *Art and Archaeology*, XI (1921), 169.

and of relatively fine texture. The basket weaves, with one exception, are the 2×2 weave, that is, with the warps woven in pairs and two wefts passing through each shed.

All these fragments of both wool and linen, constituting more than 95 per cent of the collection, could have been woven on either type of upright looms described in Chapter I, just as such fabrics had been woven for centuries.

In order to determine whether these pieces of cloth of simple weave would show any changes in texture or workmanship, or any marked tendency, Mr. Thomas Midgley examined in detail over two hundred fragments, counting the picks (warps and wefts) per inch and noting other features. The writer made a similar examination of a slightly smaller number from another part of the site, but in neither case were the results determinative or significant.

Ancient textiles themselves prove that, centuries before the dates of those from Karanis, such skill in the manipulation of the spindle and loom had been achieved that in plain weaving the production of fine cloth or of coarse cloth was a matter of choice. Good spinning and weaving or poor depended upon the individual and to a considerable extent upon the locality. The textile industry has always flourished in certain localities better than in others, because of the nature of the climate, the quality of the water, trade routes, and other less well defined conditions. At the time Karanis was founded weaving was no longer purely a home industry, but had been largely taken over by an elementary factory system,¹ and commerce in cloth was carried on between neighboring localities and those more remote. At Karanis the industry evidently supplied only the local demand. This inference is justified both by the nature of the fragments of cloth found there and by the fact that it was located on the outskirts of the Fayûm, and therefore at a distance from the most prosperous parts of that region.

In view of the negative results of the examinations and the fact that textiles of plain weaves exist in large quantities in museums, a further description of those in this collection would be useless. The collection, however, contains a relatively small

¹ For reference to contracts with weavers' apprentices see W. L. Westermann, "Apprentice Contracts and the Apprentice System in Roman Egypt," *Classical Philology*, IX (1914), 295-315.

number of specimens of different types of weaving, which are described in detail in the following chapters.

COLOR

The prevailing color in these textiles is yellow or shades of buff and tan, often difficult to distinguish from the shade which undyed wool takes with age. Brown of different shades, varying from cinnamon to a dark color, was used in plain weaving and also in stripes, especially in the heavy fabrics described in Chapter IV, Part I.

Of the stronger colors in the collection as a whole, shades of dark blue predominate. Some of them are of the color now known as "French blue." Others have a greenish cast. There are also specimens of a clear bright blue. As a rule, the blues of all shades are very well preserved.

Purple is next in frequency. It is safe to say that none of the different shades is of genuine *murex*. There were, however, numerous vegetable dyes known and used as substitutes.¹ The two general varieties of purple, the more brilliant one in which the red predominates and the very dark shade in which the blue predominates, are about equally represented. There are specimens of both that are perfectly preserved and others that are badly faded, showing a difference in the quality of the dyes used. Some shades of very dark purple seem to have been produced by dyeing the wool blue over red.² One such specimen, No. 69, is described in Chapter IV. There are also a few specimens of the lavender and amethyst shades.

Among the fragments of woollen cloth and also of knitted bags there are specimens of cardinal red of a beautiful, brilliant shade. It is apparently one of the most durable shades in the collection. There are other shades of red, pink or rose, and madder, many of them faded.

Green, which even today is considered a delicate and rather perishable color, was used with remarkable success. Some of the specimens have faded to a sage or grayish green; others are perfectly preserved and brilliant. Black was used sparingly, but, with few exceptions, the color was durable.

¹ See recipes given in *Papyrus Graecus Holmiensis*, bearbeitet von Otto Lagercrantz (Arbeten, Utgifna med Understöd af Vilhelm Ekmans Universitetsfond, Uppsala 13, 1913).

² At this period wool was dyed in the fleece and not in the yarn or cloth.

The foregoing summary includes all the colors represented. As in other collections of the same period, the main part of the web is usually of undyed wool or of a shade of yellow. The stronger and brighter colors are in stripes or broad panels, both, with few exceptions, of tapestry weave, and the web into which they are woven is generally so. Several relatively large pieces are wholly of dark blue or purple weft on light-colored warp, usually wool, though in some cases, linen, but the pieces are not large enough to enable one to say whether or not the whole web was of the dark color.

Composite stripes, that is, stripes composed of groups of narrower stripes, either all of the same color or of different colors, were evidently popular. From the imperfect evidence afforded by the fragments it appears that the use of the plain purple stripe on tunics was casual. A considerable number of pieces have stripes of the proper widths, but quite as many of them are of dark blue as of purple. It is true that, before the date of even the earliest of these fragments, the stripes on the tunic at Rome had lost their significance; but so long as they were worn at all, they appear always to have been purple.

Fragments of broad panels of both dark blue and purple are numerous, some of them of texture suitable for garments; others are thick and heavy and may be parts of coverlids or hangings.

CHAPTER III

SPECIAL TYPES OF WEAVING

THE pieces of cloth described in this chapter are not necessarily unique; some of them are not even rare. But because of the accuracy with which they can be dated and the consequent criteria they furnish, all specimens in the collection showing any deviation of any kind from the simplest form of the tabby and tapestry weaves are described. A few pieces are included as illustrations of the composite and multi-colored stripe, mentioned in the previous chapter, or of other color combinations; and others because they are interesting illustrations of certain details of weaving.

Twill weaving has hitherto been considered unusual if not impossible at the date indicated by this collection; but in view of the evidence of experimentation which one of the fragments affords it seems not improbable that the pieces of this weave described in this chapter were of local production. It would be difficult if not impossible to produce such fabric on an upright loom. It certainly could not have been woven with a single set of leashes.

The specimens of draw-loom weaving, Nos. 16-19, are skillfully done, and there is no evidence of experimentation. This fact, and the very small number of pieces of such weaving found on the site, warrant the conclusion that they are of foreign origin. Whatever their provenience, these pieces and those of twill weaving establish a *terminus ante quem* for the introduction of the horizontal loom.

In this chapter and in those which follow, the numbers and letters separated by strokes which appear above each descriptive paragraph refer to the excavation records. The first number (24 or 25) designates the year 1924 or 1925. The numbers in parentheses refer to the inventory prepared by Mr. Thomas Midgley (see page 3).

I. LOOP WEAVING AND SIMILAR TYPES

- 1 24/5022/K (I. 33) Late third or fourth century

Fragment of an undyed tapestry-woven web. In rows about three-eighths of an inch apart are loops of coarse, two-ply yarn; the loops are long and thick enough to form a heavy nap.¹

Size $3\frac{1}{2} \times 6\frac{1}{2}$ in.

PLATE I

- 2 25/4009 A'/L (14. 15) 350-450

Woolen cloth, medium weight; double selvage preserved on one side; color yellow, with rows of loop weaving of two-ply red yarn; rows three-eighths of an inch apart. The loops are badly worn, and the structure of the yarn is almost entirely destroyed.

Size $5 \times 10\frac{1}{2}$ in.

- 3 25/5093 E/C (71. 1) Late third or fourth century

Small tattered fragment of the same weave, texture, and color as No. 2; but the loops of red yarn have almost entirely disappeared. Their red color has faded into the cloth.

Size about 3×3 in.

- 4 24/P/A = Granary (24 P A) Late third or early fourth century

Fragment of heavy woolen cloth, tapestry-woven over doubled warps. At intervals of one-half inch two wefts are woven in loosely and pulled through on the upper side of the web, forming a fleecy stripe resembling loops; stripes badly worn away.

Size $2\frac{1}{2} \times 4$ in.

- 5 25/245/E (79. 7) Fourth or fifth century to 460

Heavy cloth of undyed wool woven on two-ply warps; weft yarns woven double or in pairs. After every sixth pick of the double weft a row of knots of two-ply yarn is inserted, a knot being

¹ A similar fragment was found by Yale University in the excavations at Dura-Europos. See *The Excavations at Dura-Europos Conducted by Yale University and the French Academy on Inscriptions and Letters; Preliminary Report of Second Season of Work, October 1928-April 1929*, edited by P. V. C. Baur and M. I. Rostovtzeff, p. 179 and Plate XXI, 2.

attached to each alternate warp, or to each warp on the upper side of the shed. A heavy cord is then woven through the shed back of this row of knots. The ends of the yarn of the knots form thick rows of pile which almost cover the surface of the cloth.

Size $1\frac{1}{2} \times 9$ in.

PLATE I

6 25/338 c/D (33. 3) Fourth or fifth century to 460

Brown woolen fabric, resembling loop weaving, but of different technique. The weave is simple, but at intervals of about three-sixteenths of an inch a heavy, soft cord is inlaid, not woven as a weft but laid on top of the weft already woven. The process is as follows: Six or eight wefts (the number varies) are woven, reserving every third warp. The heavy soft yarn is laid in and held by the reserved warps, which sink into the soft yarn, producing the effect of loops. These warp threads are then taken into the weaving of the next six or eight wefts, and an alternating set, consisting of every third warp, is reserved, and the yarns lie as floats across the wefts, which fill the space between the cord already laid in and the next one. The process is repeated for each inlaid cord and intervening space; the two sets of reserved warps are taken alternately into the weaving.

Size $4\frac{1}{2} \times 6\frac{1}{2}$ in.

7 24/135 D/K (86. 6) Fourth or fifth century to 460

Tattered fragment of yellow woolen cloth; weave same as that of No. 6 and texture similar.

Size (maximum) 6×7 in.

8 24/5055/T (22. 23) Late third or fourth century

Thick woolen fabric. Wefts fine, woven in bundles of four over two warps of two-ply yarn. At intervals of one-fourth inch a heavy soft yarn of yellow and green is woven *upon* the web, the process being a variation, or perhaps the forerunner of that employed in No. 6, which is later than this one.

Instead of reserving every third warp thread for holding the heavy yarn in place, one strand of each alternate pair of warps is reserved, and, as in No. 6, the web is woven back of the heavy yarn to be inserted, but the bundles of wefts pass

over two warps and one, alternately. After the heavy yarn is inserted the reserved warps are taken again into the web between the cords, there being no floats of warp in any part of the weaving. The process is much simpler than that of No. 6.
Size $2\frac{1}{4} \times 6\frac{1}{2}$ in.

9 25/340 B/A (77. 1) Fourth or fifth century to 460
Red woolen fabric, plain weave, but with two heavy floating wefts inserted at intervals of about one-fourth inch. Warps brown. There are also traces of a dark brown and yellow stripe. Piece very fragmentary.
Size about $2\frac{1}{2} \times 6$ in.

10 25/245/E (79. 9) Fourth or fifth century to 460
Small tattered fragment of green cloth, loose tabby weave over two-ply warps. Three threads of heavy brown weft, one inch and five-eighths of an inch apart, inlaid in same manner as in Nos. 5 and 6.
Size $2\frac{1}{2} \times 5$ in.

II. TWILL WEAVES

11-12 24/43/P (171. 1) Fourth or fifth century to 460
These two pieces of cloth are sewed together, and apparently formed a sleeve.
No. 11, the larger of the two pieces, is of cinnamon-brown color, and is an even, well-woven, 2×2 serge. The wool is of relatively long fiber, and both warp and weft yarns (single cord) are well twisted. The picks (or warp and weft yarns) to the inch are 30×34 . The greater part of the fragment is thread-bare, but in patches an apparent nap covers the threads. This feature appears on both sides of the cloth.
No. 12 is a fine evenly woven whipcord or gaberdine; picks 46×72 . The warp, though fine, is double (two-ply); color of cloth a pale madder. The wool is of finer fiber than that of No. 11, and there is no appearance of a nap. The sewing is of the coarse sort common to the period to which these fragments belong.

Extreme length of entire object $10\frac{1}{2}$ in.; extreme width (doubled)
7 in.

PLATE II

13 24/5043 B/D (150. 24)

Coins, 375-395

Small, badly damaged piece of woolen cloth; a serge twill, woven so as to produce a diamond pattern about one inch in length. Fragment so badly rotted that a study of the details is not possible. Color black.

Size $1\frac{1}{2} \times 5$ in.

PLATE II

14 24/120 B/AG (122. 7)

Coins, 385 to fifth century

Very badly rotted band, of twill weaving, backed with a strip of leather.

Size 2×4 in.

15 25/4009 A'/L (14. 7 and 28) Fourth or fifth century to 460

Two fragments of light yellow woolen cloth; weave an irregular twill which may have been intentional, but the poor quality of the weaving indicates an unsuccessful attempt to produce a regular twill.

These fragments are approximately of the same date as Nos. 11 and 12, and may be a century later than the well-woven hair, No. 116.

Sizes 3×5 in.; $1\frac{1}{2} \times 3$ in.

III. DRAW-LOOM WEAVES

16 24/5016 A/s (151. 42)

Coins, 277-450

Small piece of checked fabric, yellow and green woven on red warp. The weft threads are alternately yellow and green, and so woven as to cover completely the warp threads and produce even checks about three-eighths of an inch square. The colors of the checks on one side of the cloth are reversed on the other.

Size $1\frac{1}{2} \times 3\frac{1}{2}$ in.

PLATE III

17 25/249/L (15. 226)

Fourth or fifth century to 460

Fine fabric: weft dark blue and pale yellow or undyed wool, woven on light brown warp. Pattern an intricate combination of oblongs, stripes, checks, and bars. Pattern the same on both sides, but with colors reversed.

Size $3 \times 3\frac{1}{2}$ in.

PLATE III

18 25/258 B/A (13.4) Fourth or fifth century to 460

Small fragment of woolen cloth; colors red and yellow; pattern appears on both sides, but with colors reversed. Wool of long fiber, but fine and even. Pattern better preserved on the side on which the yellow predominates; the following description is of that side.

The pattern evidently consisted of diamonds or lozenges (one and five-eighths by two and one-fourth inches) outlined in red. Lozenges are in weftwise rows about one and one-fourth inches apart and are connected by a narrow band of red of the same width as their outline. In the center of each is a small solid red lozenge surrounded by four triangular designs. Alternating with the rows of lozenges and filling the field are rows of red hexagons enclosing designs in yellow.

On the fragment there are preserved one lozenge (practically intact), a small portion of a second one and the connecting red band, and also parts of two hexagons.

The weaving is close and even, and the surface smooth.

Size $2 \times 3\frac{1}{2}$ in.

PLATE III

19 25/183/A (4.7) Fourth or fifth century to 460

Fragment: green and yellow weft woven on yellow warps; design, stripes and checks. Weaving same as that of No. 17, but coarser; pattern similar.

Size about $2\frac{1}{2} \times 2\frac{1}{2}$ in.

IV. RIPPLED SURFACE

20 24/5006 F'/M (5.16) Late third or fourth century

Fragment of woolen cloth, fine texture. Light yellow with a narrow double stripe, two threads each, on one edge. The surface has an uneven ripple or wave effect produced by loosening short sections of the weft threads at irregular intervals.

Size $3\frac{1}{2} \times 3\frac{1}{2}$ in.

PLATE III

21 25/5082 A/C (7.3 and 5) Late third or fourth century

Two fragments of dark brown woolen cloth, evidently of the same web. On the larger piece a portion of the selvage (triple) is preserved; also a very small fragment of a braid

of three strands of three yarns each, on which the warp threads were strung. Near the end of the warp is a narrow stripe (two yarns of purple and two of uncolored wool). Two and one-half inches above this narrow stripe are four purple stripes, each one-fourth inch wide, separated by a slightly narrower stripe of brown. These stripes are not woven entirely across the web, but terminate about two inches from the selvage.

The weaving is fine and of the simple type, except that at irregular intervals a few weft threads are left loose, making a ripple or wave effect, precisely as in No. 20 which is approximately of the same date.

Sizes: larger piece, $6 \times 10\frac{1}{2}$ in.; smaller piece, $3\frac{1}{2} \times 4$ in.

22 24/5043 B/D (150. 3)

Coins, 375-395

Fine fabric of dark brown wool with red-purple stripe about seven-eighths of an inch wide. The cloth, including the stripe, is of simple tabby weave, but the surface has the same ripple or wave effect as that of No. 20. Cloth badly worn and very thin.

Size $6 \times 8\frac{1}{2}$ in.

V. INVISIBLE STRIPES

23 24/5015/D (21. 7)

Coins, 340-395

Dark brown woolen cloth, plain weave, but with invisible stripes produced by varying the thickness of the weft yarns and the closeness with which they were beaten in.

Size 3×6 in.

PLATE IV

24 24/5006 A/Z (5. 42-64)

Late third or fourth century

Two pieces, apparently of the same web. Weave and color same as those of No. 23, but the cloth is of finer texture.

Sizes $5\frac{1}{2} \times 8\frac{1}{2}$ in.; 2×8 in.

25 24/1115 H/T (80. 12) Coins, late fourth and fifth centuries

Tattered fragment, of the same weave as No. 24; color a little darker and texture slightly coarser.

Size $3 \times 4\frac{1}{2}$ in.

- 26 25/249/L (15. 9) Fourth or fifth century to 460
 Woolen cloth with one purple stripe and fragments of a second
 (not tapestry) on one edge. Weave same as that of No. 25,
 and texture similar. Color a little darker.
 Size about $5\frac{1}{4} \times 8$ in.

- 27 24/5008 A/X (23. 21) Late third or fourth century
 Small fragment of fine cloth of undyed wool, woven in invisible
 stripes. Of finer texture and closer weave than Nos. 24
 and 25.
 Size $1\frac{1}{2} \times 4$ in.

- 28 24/4038 A/F (206. 37) Coins, 379-450
 Fragment of about the same color and texture and of the same
 sort of weaving as No. 24.
 Size 3×8 in.

- 29 25/249/L (15. 146) Fourth or fifth century
 Small tattered fragment of brown cloth, color a little lighter
 than that of No. 28 and texture coarser, but the weave simi-
 lar. Neither in this fragment nor in No. 24 are the stripes as
 well woven as in the other specimens of this type.
 Size 4×4 in.

VI. HEAVY FABRICS WITH INLAID DESIGNS AND OTHER VARIATIONS

- 30 24/5053 A/R (27. 8) Late third or fourth century
 Canvas weave: warp of fine single-ply yarn of undyed wool,
 but woven in groups of six threads each. Weft threads in
 bundles of eight or ten each. Colors light blue, undyed wool,
 and red, so woven as to produce, on the right side of the web,
 alternate checks of the natural color and blue, completely
 covering the warp threads. In places on the fragment a row
 of red checks alternates with the blue. This may have been
 the case throughout the web, but if so, the red has disap-
 peared, leaving bare warp threads on the greater part of the
 fragment.
 There is a right and a wrong side to the web: the red and blue
 threads are more prominent on the upper or right side, and
 the weft threads looser, bringing the checks into relief. The

reverse side of the cloth is flat, with slight indication of the red and blue colors.

An interesting piece of weaving for this period.

Size $5\frac{1}{2} \times 10$ in.

- 31 24/136 c/o (35. 13, 14, 16, 18, and 19) Fourth or fifth century to 460

Five fragments of heavy cloth all belonging to one web. Warp single-ply, dark greenish blue, mingled with yellow. Weft of same color but four-ply thread. At frequent intervals short lengths of red yarn are laid in, evidently forming a pattern, but the fragments are too small and dilapidated to show its nature.

Fragments of different kinds of cloth were stitched to these pieces, one of which is a portion of a knitted bag.

Size largest fragment 6×6 in.

- 32 24/41/G (170. 5) Fourth or fifth century to 460

Very small fragment, similar to No. 31, but both warp and weft are single-ply and are of blue and yellow wool spun together. Heavy red threads, inlaid. Heavy weft thread produces a ribbed surface.

Size 2×2 in.

- 33 25/249/L (15. 51) Fourth or fifth century to 460

Fragment of heavy cloth of undyed wool of fine texture. Weft fine and very closely beaten in over bundles of warps of six yarns each. Wefts woven loosely enough so that when beaten in they overlap between the bundles of warps, giving the appearance of being twisted around one another.

Size 3×5 in..

- 34 25/200/D (22. 22) Fourth or fifth century to 460

Linen fabric, undyed. Tapestry weave on two-ply warps.

Size $2\frac{1}{2} \times 4$ in.

- 35 24/5049/H (2. 72) Late third or fourth century

Fragment of coarse plain weaving, but at intervals two weft threads are woven through one shed; fragment too small to determine the regularity with which this was done. Colors

blue and yellow, with traces of red threads, the latter perhaps laid in. The warps are two-ply, one strand being yellow and one blue; some of the wefts are yellow, and others yellow and blue spun together.

Size 3×3 in.

36 24/106 A/M (64. 4)

Coins, 383-408

Fragment of heavy woolen cloth. Warp; yellow, two-ply yarn. Weft of two shades of green, black, and yellow, woven in stripes of different compositions. The narrower green and black stripes are embroidered with linen thread in outlined squares; the wide stripe is embroidered in ovals, each enclosing a cross.

Size 4×5 in.

PLATE I

37 24/106 B/F (129. 10)

Coins, 383-408

Fragment of heavy cloth. Warp of single-ply red yarn. The wefts are also of red and are woven in bundles of four threads each and these bundles are in pairs. The two *bundles* in each pair are closely beaten together, but the *pairs* are beaten in less closely, which makes a ribbed job. Threads of dark and light green and yellow are inlaid, producing a design.

Size 4×4 in.

PLATE I

38 25/4010 D/C (35. 2)

350-450 Coins of 343

Heavy woolen cloth, plain weave. Both warp and weft of two-ply yarn, of blue and yellow spun together.

Size 2×6 in.

39 25/249/L (15. 143)

Fourth or fifth century to 460

Heavy fabric woven on thick two-ply linen warps which at intervals are held together in pairs by finer threads of linen wound around each warp. The contiguous threads of each pair are anchored to one another in the same manner. A few threads of the finer linen are also woven in at intervals. Weft, tapestry-woven, is in bands of two shades of brown, yellow, and a little red. The weft originally covered the anchorage of linen thread described above. A small portion of selvage (single) preserved.

Size 4×16 in.

- 40 24/41/G (170. -) Fourth or fifth century to 460
Linen canvas weave. Warp double; three weft threads to each shed. Short black threads of wool inlaid.
Size $2\frac{1}{2} \times 3$ in.
- 41 24/4034 A/AC (199. 1) Fourth or fifth century to 460
Larger fragment, similar to No. 40.
Size $4 \times 6\frac{1}{2}$ in.

VII. NARROW BANDS

- 42 24/156/F (50. 3) Coins, 360 to fifth century
Fragment of a thick band of soft wool. Warp relatively fine, of two-ply yarn. Weft threads, soft and thick, are woven separately, but between the warps each alternate weft is twisted around the one previously woven. The wefts were doubtless put in with a needle. The sides and preserved end of the fragment are closely bound by a tapestry-woven cloth of fine texture. Apparently the band was an inset in the finer cloth. Color yellow.
Size $1\frac{3}{4} \times 3$ in.
- 43 24/41/G (170. 3) Fourth or fifth century to 460
Fragment of band of same weave as No. 42, but finer and better preserved. Bound in same manner by fine cloth of tapestry weave.
Size $1\frac{1}{2} \times 3$ in. PLATE I
- 44 24/69/T (177. -) Fourth or fifth century to 460
Complete band, same type as Nos. 42 and 43, but of poor weaving. Apparently two similar bands bound in the same manner as No. 43 were attached to it, one on either side.
Length 12 in.
- 45 24/4012 C/B (210. 2) Coins, late fourth century
Band similar to No. 44, but more tattered and damaged.
Size $1\frac{1}{2} \times 9$ in.
- 46 25/249/L (15. 334) Fourth or fifth century to 460

47 25/188 B/A (99. 1) Fourth or fifth century to 460

Two fragments of woven bands of the same type as Nos. 43, 44, and 45, but poorly woven. In other respects all five fragments are alike.

Lengths 4 and 5 in., respectively.

VIII. MISCELLANEOUS VARIATIONS IN WEAVES AND COLOR

48 24/69/L (178. 1) Fourth or fifth century to 460

Very small fragment; fine wool woven over bundles of finely split reeds. The wool is in narrow stripes of color — green, red, red-purple, amethyst-purple, and yellow; the only example of such work in the collection.

Size $\frac{3}{4} \times 1\frac{1}{4}$ in.

PLATE III

49 25/298/F (27. 1) Fourth or fifth century to 460

Fragment, plain weave, double selvage on one edge. A stripe in red wool produced by eight weft threads woven in pairs, each thread of a pair being twisted around the other in each interval between the warps. This gives the appearance of two rows of chain stitching.

Size 5×6 in.

50 25/242 C/B (92. 1) Fourth or fifth century to 460

Small fragment. Same sort of stripe as described above, but of thicker yarn, bordering a blue tapestry-woven band, of which a small fragment only is preserved. Near this stripe is a narrower one of the same kind, giving the effect of a single row of chain stitching.

Size $2 \times 2\frac{1}{2}$ in.

51 25/234/A (40. 1) Fourth or fifth century to 460

Small fragment of one end of a web of yellow woolen cloth. Across the end there is a fringe one-half inch wide, produced by interlacing and twisting together the doubled ends of the warps.

Length of fringed end 8 in.

52 25/191/B (26. 1) Fourth or fifth century to 460

Double stripe of dark purple wool (each member two and three-fourths inches wide) tapestry-woven into a web of linen of

plain weave, but in the tapestry-woven stripe the warps are in groups of four yarns each. A narrow band, one-fourth inch of linen, canvas weave, weft yarns passing in pairs over the bundles of warps, separates the two members of the purple stripe.

Linen in good condition; probably partly bleached and but little discolored. Single selvage is preserved on one edge.

Size $6 \times 6\frac{1}{2}$ in.

53 25/174 B/A (30. 1) Fourth or fifth century to 460

Linen fabric undyed. Weft of large soft thread woven on very fine warps.

Size about 6×11 in.

54 25/249/L (15. 134) Fourth or fifth century to 460

Fragment, coarse woolen cloth of natural color, with a composite stripe of yarn of blue and natural color spun together, and woven so that each color predominates alternately in stripes of one-fourth and one-half inch.

Size 3×3 in.

55 24/156/M (94. 11) Coins, 360 to fifth century

Heavy cloth of undyed wool, tapestry-woven throughout, but so woven that alternate warp threads are prominent, giving a corded effect.

Size $4\frac{1}{2} \times 9$ in.

56 24/5008 A/X (23. 21) Late third or fourth century

Small fragment of a composite stripe, tapestry-woven on warps of undyed wool, which are much finer than the weft. This stripe is composed of three stripes three-eighths inch wide, barred with red. The wefts are of red and undyed wool, woven alternately. Separating the barred stripes is a stripe of bright blue, one-half inch wide. Two of the barred stripes and a few shreds of the third are preserved. Cloth loosely woven and soft. A small fragment of cloth of a special type of weaving (No. 27) was sewed to this piece with coarse linen thread.

Length of stripe 5 in.; width $1\frac{3}{4}$ in.

PLATE III

57 25/174 D/C (94. 4) Fourth or fifth century to 460

Fragment of fine closely woven cloth, double selvage preserved on one side. On one end part of a broad band of narrow dark blue stripes three-eighths of an inch wide (eight and fragment of the ninth) alternating with stripes, same width, of the color of the web.

Size 1 × 7 in.

58 24/5049/H (2. 12) Late third or fourth century

Elaborately striped fabric. Plain weave on brown warps. Woven in stripes of various combinations of red (predominating), yellow, brown, purple, and green.

Size $2\frac{1}{2}$ × 6 in.

59 24/5006 A/Z (5. 9) Late third or fourth century

Very small tattered fragment of woolen cloth woven in checks of 6 × 8 threads each. Colors predominating, yellow and dark greenish blue; at one corner there is a small portion of a pink or rose-colored weftwise stripe of the same width as those of the other two colors. This pink band takes the place of a yellow one in alternating with the blue.

Size $3\frac{1}{2}$ × $6\frac{1}{2}$ in.

60 25/249/L (15. 323) Fourth or fifth century to 460

Small fragment of yellow woolen cloth, medium weight, evenly woven. A composite stripe of two blue stripes, three-eighths of an inch wide, separated by a red one one-fourth of an inch wide. Colors remarkably well preserved.

Size $2\frac{3}{4}$ × 5 in.

61 25/249/L (15. 259) Late fourth or fifth century

Fragment of heavy cloth, woven in stripes. Colors: a stripe of red three-fourths of an inch wide, one of brown one inch wide, and fragments of one of amethyst-purple. The red stripe was at the end of the web and the heavy braided cords on which the warps were strung is preserved — a good specimen of this detail.

Size $2\frac{1}{4}$ × 5 in.

62 24/136 c/o (35.21) Fourth or fifth century to 460

Small fragment of undyed wool, plain tapestry weave, fine and even. Surface covered with a fine nap, much of which still remains. The nap, but not the threads, worm-eaten in places; fragment otherwise well preserved.

Size $3\frac{1}{2} \times 3\frac{1}{2}$ in.

63 25/245/E (79.9) Fourth or fifth century to 460

Small fragment of fine linen; bleached threads. Both warp and weft threads slightly twisted. Around each thread of both there is twisted a fine thread of blue, giving a mixed blue and white color to the fabric.

Size $\frac{3}{4} \times 7$ in.

CHAPTER IV

TAPESTRIES

THE weaving of patterns into webs of cloth by the process known as tapestry weaving is of very ancient origin. Fine specimens of such work were found in a tomb at Thebes which dates from the Eighteenth Dynasty (1500 B.C.). The primitive process, though it required skill, is easily described. A drawing of the design to be inwoven was probably made to serve as a pattern for the weaver. The plain portions of the web were woven in the usual manner, but at the proper places the design was worked into or darned upon the warp with a needle; this work was done in conjunction with the weaving and as a part of it.

Since the weft and warp cross each other at right angles, and since tapestry designs include various forms, such as roundels, ovals, flowers, vases, animal and human figures, all of curving outlines, skill was required, not only in executing the design, but in adjusting the surrounding web to fit its contour.

In the group of fine textures in this collection there are a considerable number of plain, well-woven tapestry panels, stripes, and roundels; some have plain edges, others have crested, scalloped, or other styles of border. The specimens of pattern weaving are few, and, for the most part, are of two widely differing classes. The first consists of only a half-dozen pieces (Nos. 64-69), which are remnants of the Graeco-Roman period, and both in design and execution show such a degree of skill and refinement, as compared with other specimens in the collection, that it is safe to assume that they are not local products.

The second and larger class bears the stamp of provincial folk work, and perhaps of poverty. The weaving is coarse; the designs, which are not without originality, appear to have been indefinite in drawing, and are certainly crude in execution.

Between these two classes are a few specimens of ambitious and comparatively well-executed border designs, such as that of No. 80; of finely woven roundels, such as No. 81; and the unusual and striking leaf form, No. 71.

Contrasting with the crudeness of many of the tapestry patterns woven into the web is the general fineness and delicacy of the designs, which in conjunction with the weaving are worked with linen thread on plain tapestry panels, roundels, and stripes. On the finer fabrics, interlaced patterns are most numerous. Unfortunately, no term has been adopted to distinguish this style of tapestry weaving from that which consists of figures actually woven into the web, such as are seen in Nos. 65 and 66. Writers occasionally refer to this kind of work as "embroidery," but that term is not applicable. In this text the designations "overlaid" and "designs in overlaid thread" are used.

A variation of this technique produces the delicate patterns of rosettes and similar figures and also geometric designs. They appear to be composed of short groups of fine running stitches, but are, in reality, produced by bits of fine linen thread wrapped around the warps between the colored wefts (not inlaid). The patterns resemble pen drawings of such designs, made by short horizontal strokes of a fine pen. In this chapter the term "broken lines" is used in describing specimens of this work.

Many of the heavier tapestry-woven fabrics are elaborately woven in intricate geometric figures and interlaced designs. Some of the patterns are in strong relief, suggesting brocade. To judge by the specimens on which the selvage edges are preserved, this type of fabric was usually narrow; some of the pieces in the collection are not more than six inches in width. They were probably used for hangings and other decorative purposes.

I. FINE FABRICS

64 24/159 H/Q (I28. 17)

Coins, 395-457

Fragment of a tapestry-woven panel of undyed flax, and dark purple, red, and green wool. Only the border of the panel is preserved. It consists of red and green conventionalized flower buds alternating with a crest design. The border is separated from the central part of the panel by two narrow stripes of flax, with a narrow stripe of purple wool between them. Remaining fragments of the central portion of the panel indicate that the design consisted of circles of red and yellow wool and undyed flax, each enclosing a cross of contrasting color.

Size $2 \times 8\frac{1}{2}$ in.

PLATE V

65 24/41/G (170. 7) Fourth or fifth century to 460

Fragment of a linen panel, with a tapestry-woven design in dark purple wool. Main design a circle enclosing four vases and floral sprays in radiating arrangement. The corners and border of the panel were filled with a floral design, much of which has disappeared, leaving the bare warp threads. Wool of fine texture; weaving even and smooth. The design and weaving of this panel and of No. 66 are of the same general type and appearance as some of the tapestry pieces from Akhmîm, in the Victoria and Albert Museum (see A. F. Kendrick, *Catalogue of Textiles from Burying-Grounds in Egypt* [London, 1920, 1921, 1922], Vol. I, No. 96).

This specimen and No. 66, and another one which is in shreds, are the only ones of this type in the collection.

Size 3 × 5 in.

PLATE V

66 25/191/B (26. 4) Fourth or fifth century to 460

Fragment of very fine tapestry weaving. Purple wool on linen warps; central design two ovals, the separating member, a vase. In each oval is a human figure, one apparently in the act of throwing a ball. Details in fine undyed linen thread. Very fragmentary. This is the only design with a human figure in the entire collection.

Size about 3 × 5 in.

PLATE V

67 24/106 A/M (64. 5a) Coins, 383-408

Small fragment of a band of undyed flax and purple wool. In the central part of the band are three rows of minute tapestry-woven squares of undyed linen; a diamond-shaped design in broken lines of linen encloses each one of the central row of squares. Serrated border. At one end of the fragment there is a portion of a larger design; not clear.

Size $1\frac{1}{4} \times 3\frac{1}{4}$ in.

PLATE V

68 25/249/L (15. 230) Fourth or fifth century to 460

Small tapestry-woven fragment; ground light brown. Design: a row of red, heart-shaped motives placed longitudinally; on either side of this row is a guilloche in black. Design and execution exquisite. For an example of this heart-shaped

motive in Coptic sculpture see W. E. Crum, *Catalogue général des antiquités égyptienne du Musée du Caire*, Pl. XLVIII, No. 8676.

Size $1\frac{1}{4} \times 5\frac{1}{2}$ in.

PLATE V

69 25/258 B/A (13. 5)

Fourth or fifth century

Small piece of one end of a tapestry panel. Design: a row of ovals woven in undyed linen on double linen warps. There is a small red square of wool in the center oval. Pattern filled in with green wool, the greater part of which has perished.

Size $1 \times 6\frac{1}{2}$ in.

70 24/5048/AX (154. 4)

Coins, 275 to fifth century

Elaborate, finely woven panel, star-shaped (formed by two overlapping squares, or it may be a square overlapping the end of a stripe). Color purple, with a few details worked in linen thread. Four narrow stripes of two or three threads, of a little lighter purple than the main design, are woven across the star.

Size $3\frac{1}{2} \times 5$ in.

71 24/121 C/W (70. 2)

Coins, 324-326

Brown cloth, wool, plain weave. Along one edge are fragments of a tapestry-woven band of purple. Design: large sharply cusped leaves ($1\frac{3}{4} \times 2\frac{1}{2}$ in.); veins and other details inwoven in linen thread.

Piece very fragmentary and worm-eaten. Near the tapestry band are two rows resembling chain stitching, but really produced in the weaving — a feature frequent in textiles of this period.

Size 9×11 in.

72 25/200/D (22. 21)

Fourth or fifth century to 460

Small fragment of yellow fabric with two dark purple tapestry stripes on which there is a broken-line pattern in fine linen thread. Design: circles, each enclosing a rosette. The work is of fine quality.

Size $2\frac{1}{2} \times 3$ in.

PLATE VI

73 25/249/L (15. 19)

Fourth or fifth century to 460

Fragment of two dark purple stripes woven into a brown woolen cloth of fine texture. The two purple stripes, each one and one-fourth inches wide, are separated by two narrow stripes of plain brown, between which there is a narrow running pattern, tapestry-woven in purple; the design is double scrolls between groups of three lozenges. On the two wide stripes there is a symmetrical design in broken lines of fine linen thread. The stripes have a delicate crested border. The weaving and the materials are of fine quality.

Size about $4\frac{1}{2} \times 4\frac{1}{2}$ in.

PLATE VI

74 25/312 D/B (81. 1)

Fourth or fifth century to 460

Purple tapestry panel woven on linen warp; weft woven over two and three warps (occasionally four) alternately, producing a corded surface. One end of the panel is hemmed with red wool yarn; the other is circular. In the middle portion of the panel there was woven a design composed of numerous figures, but nearly all of the wool in the design has perished. In other parts of the panel the pattern is inserted with overlaid linen thread; design indefinite.

Size $5\frac{3}{4} \times 15$ in.

75 25/5034 A/H (50. 2)

Late third or fourth century

Purple tapestry-woven roundel with an interlacing design (now indistinct) woven in fine overlaid linen thread. Portions of plain brown woolen cloth, into which the roundel was woven, adhere to it. Brown cloth of same color and weave as No. 94, which came from the same house, and both may have been parts of the same web, but this piece is badly worn, thin, and fragmentary.

Size of roundel $4 \times 4\frac{1}{2}$ in.

76 25/5033 A/B (34. 1)

Late third or fourth century

Either a portion of a large roundel or the circular end of a large panel. Red or red-purple wool (probably faded); woven on linen warps in bundles of four. The weaving of the wool is plain tapestry, on which there is an overlaid design of rosettes and interlaced patterns.

A fragment, probably of the same panel, was found with it; same color and texture, but the greater part of the wool has perished.

Size of each fragment about $3\frac{1}{2} \times 6$ in.

PLATE VI

77 24/5006 A/Z (5. 180) Late third or fourth century

End of a tapestry stripe, one inch wide, originally dark purple but badly faded, woven into a yellow cloth. At the end of the stripe, and forming a right angle with it, there is a projection one and one-half inches long of the same color, width, and weave as the stripe. The end of the projection is divided into two equal prongs one-half inch long.

A few threads of the stripe are woven beyond the right angle, making a singular appendage, one-half inch long by one-eighth inch wide.

PLATE IV

78 24/41/G (170. 1) Fourth or fifth century to 460

Fine closely woven yellow fabric with a double tapestry-woven band in blue. Only a fragment of the second section of the band is preserved. Design: a running floral pattern with a crested border.

Size $2\frac{1}{2} \times 9$ in.

PLATE VII

79 24/100 A'/N (218. 2) Coins, 335 to fifth century

Dark purple roundel woven into a web of yellow cloth. The wool in both the cloth and the roundel is of long fiber, which is matted in places, covering the threads as if the cloth had once had a nap. The cloth is relatively coarse and the texture uneven. Around the edge of the roundel there is more than the usual distortion of the warps, and the correction of it can be traced to the edge of the fragment. The roundel is covered by an interlacing strap design with a rosette center and a cable border, all of linen.

The purple of the weft of the roundel was evidently produced by dyeing the wool dark blue over red. The latter color has faded into the linen design; on the tattered portion of the roundel the blue dye has been destroyed in spots, leaving the weft a clear red.

Size $4\frac{3}{4} \times 5$ in.

PLATE VI

80 25/249/L (15. 397) Fourth or fifth century to 460

Large tapestry-woven oval; dark purple, of poor dye, and badly faded; a portion of one end missing. Border (tattered) consists of rosettes alternating with groups composed of one large and four small dots. On the oval there is a design in outline (now indistinct) in fine linen thread.

Size $4\frac{1}{2} \times 7$ in.

81 25/249/L (15. 10) Fourth or fifth century to 460

Dark purple roundel, with scalloped border, tapestry-woven into a yellow woolen cloth. Pattern in fine undyed linen in broken lines; design indefinite.

Size of roundel $3 \times 3\frac{3}{4}$ in.

PLATE VI

82 25/249/L (15. 295) Fourth or fifth century

Oval of tapestry woven into a brown woolen fabric, which is badly worn and tattered. In the central part of the oval there is a small animal figure, woven in brown. The pattern is filled in with undyed wool. Surrounding the design is a border of red, one-half inch wide, with scalloped edge, and scrolls of undyed wool. The oval was probably a part of a tapestry-woven band.

Size of oval $2 \times 2\frac{1}{2}$ in.

PLATE VIII

83 25/248 F/D (54. 1) Fourth or fifth century to 460

Coarse yellow woolen fabric with fancy tapestry-woven stripes of black, green, red, and yellow, forming designs. A portion of a cross, the vertical member being a fancy stripe of red, black, and yellow; the cross piece, solid green, is distinguishable.

Size 8×9 in.

PLATE VII

84 25/249/L (15. 111) Fourth or fifth century to 460

Two tapestry bands, with design in dark purple wool, woven into a linen cloth. There is a width of six inches of the linen cloth between bands. The fragment is evidently a part of a small tunic.

The design of the bands consists of two parallel rows of leaves in dovetail order. The stems of the leaves in each row are con-

nected by a curved double stripe of purple, forming scallops on either edge of the band. Outside the scalloped edges there is a plain narrow stripe of purple. The details of the leaves are of linen thread. At intervals of about six inches, or after each sixth scallop, the floral design is interrupted by peculiar and indefinite figures, three of which (all different) are fairly well preserved, and there are fragments of three others. Unlike the floral motives, these figures are woven in linen and the pattern is filled in with purple wool. The figures appear to be animal forms, one perhaps a lion.

The design has considerable merit, but the weaving is rough and unskillful, one of the bands being badly drawn and puckered. The weaving of the other one is decidedly better.

PLATE VIII

Length of bands 19 in.; width $1\frac{3}{4}$ in.; width of entire piece $9\frac{1}{2}$ in.

85 25/200/D (22. 30) Fourth or fifth century to 460

Fragment of wool fabric, natural color, with a wide tapestry-woven stripe of dark purple, having as a border (preserved on one edge of the stripe only) a crude wave pattern, typical of the tapestry-woven designs in the collection.

Stripe worked with fine linen thread in broken lines, giving a checkered effect.

Size 4×4 in.

PLATE VIII

86 25/249/L (15. 355) Fourth or fifth century to 460

Yellow wool fabric, tapestry-woven figures in dark blue. Design apparently a row of trees (parts of two only preserved) separated by some object, not intelligible. Under each tree are two crudely executed figures of animals, arranged in procession instead of in balanced composition, as is customary in designs of this sort.

Along one side of the fragment and bordering the design is a stripe of red woven in double chain-stitch. There are traces of a similar stripe bordering the other side of the design.

Size $3\frac{1}{4} \times 5\frac{1}{2}$ in.

PLATE VII

87 25/250/1 (11. 17) Fourth or fifth century to 460

Linen fabric, plain weave; tapestry-woven band of linen; weft threads passing over two warps. Design in colored wool;

two leaves with stems, one red and one green, preserved; also a portion of some object, perhaps a vase, in brown wool. Attached to this fragment is a small piece of linen cloth, into which a tapestry band was woven, presumably in wool, which has completely perished. Design: circles, each enclosing a cross. Crested border.

Size $1\frac{1}{2} \times 6$ in.

88 25/261/D (88.20) Fourth or fifth century to 460

Fragment of yellow woolen cloth, plain weave, with a narrow tapestry-woven, running floral pattern in black, a pleasing design but roughly executed.

Size $3\frac{1}{2}-5 \times 5\frac{1}{2}$ in.

PLATE VIII

89 25/249/L (15.319) Fourth or fifth century to 460

Very small fragment of yellow woolen cloth with a double stripe of dark blue. On one edge there is a red stripe; the selvage, apparently worn or broken, is reinforced by coarse button-hole stitches in red yarn.

Length of button-hole stitching 3 in.

90 24/5050 A/H (10.1) Coins, 324 to fifth century

One end of a web of yellow woolen cloth; both selvages (triple) are preserved. Near the end is a narrow stripe of three threads of purple.

In each of the lower corners, equidistant from the end and edge of the cloth, is a tapestry-woven purple square (one inch) divided by a double stripe (three threads each) of yellow.

The piece is perhaps the lower part of a small tunic.

Size $12\frac{1}{2} \times 18\frac{1}{2}$ in.

91 24/5016 A/s (151.35) Coins, 277-450

Broad tapestry-woven panel of very dark blue or black, woven on yellow warp. On each side of the panel there is a border five-eighths of an inch in width. The design is a cable, or guilloche, pattern all woven of the same color as the panel, with the details outlined by needle with linen thread of natural color; the design, however, is produced entirely in the weaving and is all of one color.

A portion of cloth on one side of the panel is preserved. Color

light brown with a narrow double stripe of black; about three-eighths of an inch from the outer edge is a red stripe. A small portion of the braided cord on which the warps were strung is preserved at one end of the web.

Size 9×13 in.

92 25/2017 D/E (100. 2) Coins, fourth and fifth centuries

Tapestry roundel (nearly intact), woven in brown wool into a coarse yellow woolen cloth. Woven into one side of the roundel are a narrow dark purple stripe and fragments of another. Along the outer border of the opposite side of the roundel there are a green stripe and fragments of brown tapestry weaving — perhaps of another roundel. On the roundel there was a design in yellow yarn; now indefinite.

Size $4 \times 4\frac{1}{2}$ in.

93 25/249/L (15. 329) Fourth or fifth century to 460

Heavy cloth of undyed wool, with a tapestry stripe, a running pattern with dots and an indefinite design, possibly a leaf, at intervals; crested border. This band evidently bordered a wide tapestry-woven purple panel, a fragment of which, adjoining the band, is preserved. Design and execution unskillful.

Size $6\frac{1}{2} \times 8$ in.

94 25/5034 A/H (50. 1) Late third or fourth century

One end of a narrow web of brown woolen cloth with triple selvage, two sections of four warps each and one of three, on each edge. A portion of the extreme end of the web preserved shows how the warp threads were strung over a bundle of three yarns. One and one-half inches above the lower edge there is a narrow stripe, red or light purple (badly faded), with two threads of white linen running through the center. Above this stripe and in either corner of the cloth there is a small tapestry-woven roundel of dark purple, woven in four sectors. The roundel is worked with linen thread in broken lines; either design was not completed or else some of the threads have perished.

This fragment is apparently the lower part of either the front or the back of a small tunic. If so, the manner in which it

is woven is unusual. Tunics supposedly of the period of this one (such as those in the Victoria and Albert Museum, from Akhmîm) are woven with the selvage on the *bottom* of the tunic and with the *ends* of the web in the underarm seams. In this fragment the selvage would be in the underarm seams and the end of the web at the bottom of the garment.

Size $9\frac{1}{2} \times 17\frac{1}{2}$ in.

- 95 Two narrow strips of tapestry tied together. Black weft over flax warps; latter in bundles of three threads each. Close, even weaving. See No. 97

- 96 Similar to No. 95, but weft a dark purple and woven over bundles of three-warp threads alternating with a single thread, producing a cord effect.

Length 5 in.

See No. 97

- 97 24/5006 A/Z (5. 104, 150, and 163) Late third or fourth century

Same as No. 96, but weft of slightly brighter purple.

Length 3 in.

- 98 25/5076 B/D (3. 1) Late third or fourth century

Small piece of a hem of a cloth of yellow wool; edge of hem worked with button-hole stitch in fine red yarn. Four yarns are carried along the edge, and each stitch passes over an alternate one of the four.

Length $4\frac{3}{4}$ in.

II. HEAVY FABRICS

- 99 24/4008 B/C (196. 1) Coins, late third and fourth centuries

Heavy fabric woven on double two-ply flax warps, undyed. Weft brown with stripes of yellow and a darker color, possibly blue, but badly faded; pattern woven of undyed linen. Design: rectangles filled with an intricate geometric form. Work even and of good quality. Surface of the flax is slightly glazed.

Size $7\frac{1}{2} \times 8$ in.

100 24/128 A/O (110. 1)

Coins, 340-395

Tapestry weaving on heavy single wool warps; weft principally light and dark brown. Star or irregular oval designs, with serrate edges, are woven of the dark weft, with small portions of blue and of red yarn in alternate designs. The ovals, or stars, are also filled with circles, scrolls, and geometric forms woven of linen thread. A portion of the selvage on one side is preserved.

Size $5\frac{1}{2} \times 11$ in.

101 24/101 E/O (109. 1)

Coins, 345-395

Heavy fabric woven on double two-ply wool warps. Color yellow. At one end, a three-strand braid on which the warp yarns were strung is turned over and forms a border. The selvage is preserved on both edges.

Weft brown and yellow, woven in plain and fancy stripes. The dark stripes are inwoven with yellow or uncolored wool, in zigzag lines and ovals, forming a chain pattern.

Size $10\frac{5}{8} \times 12\frac{1}{4}$ in.

102 24/165 C/L (41. 1)

Coins, 383-450

Heavy fabric woven on double two-ply wool warps. Color light brown. Weft light and dark brown. A large roundel of the latter color fills nearly the entire width of the web. Around the edge of the roundel there is a border of interlacing design. The interior is filled with an elaborate design in hexagons and other geometric forms.

Width of web (a portion of selvage on both sides preserved) $15\frac{1}{2}$ in.; length 9 in.

103 24/5024 D/AF (11. 5)

Late third or fourth century

Tapestry-woven fabric on thick double (two-ply) warps of undyed flax. Weft of wool woven in stripes of two shades of brown, with narrow stripes of green and black at varying intervals. On the darker brown and on the green and black stripes are geometric patterns, of linen thread, unusually long ends of which are left on the reverse side.

Size $3\frac{1}{2} \times 11$ in.

PLATE IX

104 24/161 c/j (89. 8)

Coins, 408-450

Heavy fabric, six inches wide, double warps and double selvages.

Color yellow with a brown stripe having a few threads of yellow. Above the stripe is a crude running floral design in brown and yellow.

Size 6×7 in.

105 25/4007 D/A (20. 1)

Coins, late fourth century

Brown wool fabric with heavy two-ply wool warps. Weft single and much finer than the warp. Design: an all-over pattern of geometric figures woven of yellow wool. Since the yarn is heavy and the weaving close, the designs, especially the boundary lines, are in strong relief.

A portion of a double selva (two bundles of three warps each) is preserved on one edge. Two narrow brown stripes, one inch apart, are woven in at intervals of three and one-half inches.

Size 8×8 in.

PLATE IX

106 25/262/A (67. 3)

Fourth or fifth century to 460

Heavy woolen fabric woven on two-ply warps (natural color) which seem to have been glazed. Weft fine, woven in stripes, portions of two of which are preserved, one brown with yellow border, the other a composite of green, purple, red, brown, and yellow. Into the latter is woven in linen thread, of natural color, an intricate geometric design. The brown stripe has a similar but less elaborate design.

Size $2\frac{3}{4} \times 6$ in.

107 25/249/L (15. 382)

Fourth or fifth century to 460

Short piece of heavy narrow woolen cloth woven on two-ply warps; parts of both selvages preserved. A brown tapestry-woven panel with crest border fills about three-fourths of the width of the web. Along one end of the cloth is a tapestry-woven band with crenelated border.

In both the panel and the stripe are patterns in wool of natural color. Design on former is geometric; on latter, not clear.

Size $8 \times 12\frac{1}{2}$ in.

108 25/249/L (15.65) Fourth or fifth century to 460

Coarse tapestry weaving, brown and yellow on two-ply yellow warps. Design: a cable pattern in brown, with a brown stripe on either side. Details not distinguishable. Small fragment.

109 25/215 F/A (49.1) Fourth or fifth century to 460

Heavy fabric woven on double yellow warps. Weft of light and dark brown woven in stripes, into which are woven with yellow wool elaborate, interlacing curves, producing a modified guilloche. Heavy selvage on both sides preserved.

Size $8 \times 11\frac{1}{2}$ in.

PLATE IX

CHAPTER V

KNITTED BAGS

NUMEROUS bags such as those found at Karanis are to be seen in various museum collections. They are made of colored yarn and have hitherto been called plaited bags.

Plaiting or braiding consists in interlacing three or more strands of thread, hair, or fiber. Knitting consists in looping one continuous thread back and forth upon itself, with the loops, known as "stitches," in parallel rows.

Experiments made by the writer, which resulted in the exact reproduction of the basic fabric of these bags, prove that the work is actually knitting, though it was not done with ordinary knitting needles, nor was it done with a hook, as is crocheting. With our present lack of knowledge it is impossible to say what devices the ancient knitters used. The needle which the writer used was the longest crewel needle obtainable. Some of the ancient bronze needles of more than ordinary length, to which no very definite use has been attributed, would have served the purpose.

A description of all the details in the making of the bags would be tedious and out of place here, interest for the present being limited to the structure of the fabric. The process which the writer employed in reproducing it is as follows:

The first step was to devise a way to hold the work in place as cloth is held in a loom while being woven. For this purpose a small rectangular frame was used. Along the lower cross piece of the frame a strip of tape was attached; along the upper edge of this tape a piece of the yarn to be used in making the fabric was fastened by firm stitches about three-sixteenths of an inch apart. These intervals on the yarn were the foundation stitches for beginning the work.¹ The other end of the yarn, which was as long as could be used conveniently, was threaded into the

¹ The yarn used by the writer was coarser than that in the bags, so that the stitches were necessarily longer and the fabric was looser.

crewel needle, and with the common overcast or whipping stitch was passed through each of the foundation stitches. When the last foundation stitch was reached, the work was turned and a second row of overcast stitches was looped upon the row just completed, thus returning to the point of beginning. The work then proceeded back and forth as in other knitting.

Overcast stitches have a diagonal or oblique position, and when placed in rows, one above another, they form, if the work is properly done, a continuous diagonal corded effect on the surface of the fabric — a feature which is characteristic of these bags. By inserting the needle so that the inclination of these stitches is reversed the direction of the diagonal cords is similarly changed. By this device the so-called herringbone stripe and the various patterns of diamonds and the braid effects, which appear on some of the bags, are produced.

In order to reinforce the bottom of the bag, about one inch or more at the lower end is made of double thickness by placing the stitches of the first inch or so of the second row in the same loops, or foundation stitches, with the stitches of the first row. The corresponding stitches of the third and fourth rows are looped into those of the second; those of the fifth and sixth rows into the stitches of the fourth, and so on. This combining of alternate rows of stitches narrows the bag and accounts for the contraction of the lower end, which is a characteristic feature.

This process also afforded a convenient place for securing and covering the ends of the yarns, since numerous lengths of yarn would need to be used in making a bag.

Some bags were made double throughout in the manner described above. In them there is an additional thickening of the lower part.

The fancy stripes in color are not knitted, but were put on with embroidery stitches after the knitting had been completed.

The bags described in the following paragraphs are representative specimens.

SPECIMENS OF BAGS

110 24/159 H/P (87.1)

Coins, 395-457

Bag of green, yellow, and red wool knitted in narrow stripes; embroidered with yellow wool in diagonal lines, so as to make a diamond pattern. A small portion of the closed end of the

bag is missing. The open end, or top of the bag, has, as a finish, a gimp of the style of one frequently used on furniture at the present time.

It consists of a stiff, hard-twisted, three-ply cord with an outer covering of wool twisted tightly around it. This stiff cord is woven as a weft on six two-ply warps of yellow and red wool. The cord, as it is woven back and forth, is made to form loops instead of a selvage at the edges. The width of the gimp, including the loops, is one-half inch. It is not sewed to the bag, but is attached in the knitting by passing the yarn through the loops on one side.

Length 11 in.; width $8\frac{3}{4}$ in.

111 24/132 A/C (60. 1) Coins, late fourth century

Woolen bag knitted in wide stripes of rich red, separated by narrow stripes of green. The red stripes are embroidered with yellow and green yarn in diamond pattern. The green stripes are embroidered with chevron pattern in yellow.

The lower or closed end of the bag is well preserved. The top is finished with a green and yellow gimp of the same type as that on No. 110.

Length $19\frac{1}{2}$ in.; width 9 in.

112 24/165 C/L (41. 3) Coins, 383-450

Fragment of the lower end of a yellow bag. Knitting pattern: large diamonds with rows of interlaced or braid design. The upper edge of the fragment is charred and blackened.

Size about $4\frac{1}{2} \times 12$ in.

113 25/249/L (15. 38) Fourth or fifth century to 460

Dark blue bag with narrow red stripes; plain knitting; embroidered in elaborate pattern with red and yellow yarn. A portion of the bottom of the bag showing its structure is preserved. The top is mostly destroyed, but a few fragments of a heavy three-ply braid of red yarn, which formed the heading, are preserved.

Size about 9×9 in.

PLATE X

114 25/315 E/A (56. 1) Fourth or fifth century to 460

Bag knitted of red wool in stripes of braid, lozenges and herringbone patterns. Embroidered design in green and yellow along

the seam on either side. The top has a heading of gimp (green and yellow) similar to that of No. 110. A little below the gimp the top of the bag is reinforced by a row of heavy chain stitching. The lower part of the bag is in shreds.

Depth of bag 11 in.; width 10 in.

PLATE X

115 25/202 A/B (17. 1)

Fourth or fifth century to 460

Fragment of a bag of red yarn knitted double. The heavy reinforcing at the bottom is quadruple; embroidered design in yellow and dark green along the seam at the side. Knitted pattern is of herringbone stripes, diamonds, and braid effects.

Size 6 × 12 in.

CHAPTER VI

HAIRCLOTH

WITH a few exceptions, all of which are mentioned in the following pages, the haircloth found at Karanis presents no unusual features. A fragment of the same weave and of about the same texture as No. 116 was found in the Yale University Excavations at Dura.¹

SPECIMENS OF CLOTH

116 24/5006 A/Z (5. 142) Late third or early fourth century
Fragment, woven hair; reddish brown; pliable and fine. Woven
in a serge (2 × 2) twill. Weaving even and close.
Size 4-5 × 10½ in. PLATE IV

117 24/4023 A/D (198. 17) Coins, 313-395
Fragment, dark brown woven hair; two-ply thread. A narrow
stripe is woven in yellow, bordering a lozenge pattern in
stitching of the same color as the stripe.
Size about 4½ × 6½ in.

118 24/4025 G/E (184. 3) Fourth or fifth century to 460
Fragment, both ends and border missing. Woven in the same
pattern as is No. 122. Colors yellow and dark brown.
Length about 10 in.; width 1¼ in.

119 25/219 A/B (58. 5) Fourth or fifth century to 460
Piece of dark brown cloth interwoven with stripes and geometric
pattern in yellow hair (natural color). The selvage on one
side is preserved and a fragment of it on the other. A por-
tion of the fringe (composed of the warps) is preserved on
one end.
Size 16 × 20 in.

¹ See P. V. C. Baur and M. I. Rostovtzeff, *The Excavations at Dura-Europos*,
p. 179, and Plate XXI, Fig. 1.

120 25/249/L (15. 339) Fourth or fifth century to 460

Two fragments of woven hair, both dark brown. Across one, at close intervals, yarns of light yellow hair are inserted in long stitches.

Size 4×7 in.

The attached fragment is badly worn and clumsily darned with a yarn of light hair. One edge is worked with stitches of linen thread.

Size about $4\frac{1}{2} \times 4\frac{1}{2}$ in.

121 25/249/L (15. 299) Fourth or fifth century to 460

Band two inches wide of dark brown and yellow hair with a few threads of red (dyed). Woven in bars and checks. One end is worked into a loop for attachment. On the other end strands of the weft form a fringe. An ornament, probably for a caparison or a hanging.

Length, including fringe, about 12 in.

PLATE X

122 25/213 C/B (42. 1) Fourth or fifth century to 460

Fragment evidently of the same nature as No. 121. Upper part missing. Woven of yellow and red weft on dark brown warps; border of dark brown.

Size $2\frac{1}{4} \times 9$ in.

123 25/229 A/A (36. 1) Fourth or fifth century to 460

Brown closely woven fabric; border a double chevron pattern in red and yellow yarn. Above this design six of the mixed red and yellow yarns are woven on the brown warps, producing a band of small checks.

Size $4\frac{1}{2} \times 5$ in.

124 24/113 A/C (97. 1) Coins, 314 to fifth century

Piece of dark brown cloth, plain weave, folded and enclosed in a covering of leather, now badly rotted. On one part of the object perforations in the leather and fragments of the slender thongs by which it was attached to the cloth are preserved. It may have been used as a pad for a neck yoke.

Length 18 in.; width 5 in.

125 24/127 E/C (45. 1) Fourth or fifth century to 460

Heavy bag of brown hair, plain weave; much worn and darned.

Loops of heavy cord (about one-fourth inch in diameter) of fiber or bark are attached, at intervals, to the top of the bag to serve as holders for a draw string.

Width 21 in.; depth 12 in.

CHAPTER VII

MISCELLANEOUS OBJECTS

THIS chapter includes the miscellaneous articles, made of textile material, which are of general archaeological interest. Several tangled masses of the fiber cord used for making nets were found, but the pieces of net are fragmentary — most of them are in shreds.

DESCRIPTIONS OF OBJECTS

126 24/121 C/W (70. 5) Coins, 324-326

Fragment of a cup or thimble-shaped object of curious fabrication. The foundation is a heavy two-ply linen cord, which is covered by loose button-hole stitching in coarse thread. After a short length of the cord was covered in this way, the covered portion was curved around upon itself just as is done with the braid in the top of the crown of a straw hat, or as is done in beginning a crocheted mat or cap. The work then proceeds exactly as in making a crocheted cap, except that the stitches are made over the heavy cord. The nature of the stitches is evidence that they were made with a needle instead of a hook.

Diameter of circular top 1 in.; circumference about $3\frac{7}{8}$ in.

127 24/131 C/M (96. 9) Coins, 325 to late fourth century

Two pieces of cord used on clothing. One is made of two bundles of warp threads with a soft weft wrapped about each and crossing itself between them. Resembles the modern sou-tache braid. Color yellow.

Length 18 in.

The second cord is a mixture of red, yellow, and black wool, perhaps some blue.

Length 13 in.

128 24/145 L/- (58. 10) Fourth or fifth century to 460

Piece of shaped wool felt, yellow. Perhaps a cap like the *pileus*.

Fragmentary and worm-eaten.

Size (doubled) about $7\frac{1}{2} \times 10$ in.

129 24/121 E/J (118. 2) Coins, 324-326

Similar to No. 128. At one end six yarns, parallel and about one-fourth of an inch apart, are pressed into the felt.

Size (doubled) about $4\frac{1}{4} \times 10$ in.

130 24/127 A/H (224. 1) Fourth or fifth century to 460

Fragment of a net of single two-ply flax. Mesh five-sixteenths of an inch square.

Size 9×9 in.

131 24/4037 E/E (207. 4) Coins, 345 or fifth century

Fragment of a net of fiber, knotted with double cord. Mesh one-half inch square.

Size about $4\frac{1}{2} \times 8$ in.

132 24/4028 E/C (194. 1) Coins, 361-363

Circular pad of loosely felted hair; perhaps felt in the process of making.

Size $4 \times 4\frac{3}{4}$ in.

133 25/249/L (15. 256) Fourth or fifth century to 460

Small skein of cotton thread dyed turkey red. Thread well twisted and regular in diameter. Probably imported from India.

Length of threads about 12 in.

134 25/261/D (88. 31) Fourth or fifth century to 460

Small sleeve (evidently from a made-over garment) of yellow woolen cloth, plain weave; lower edge has hem turned and sewed in overcast stitches with red yarn. In the middle of the upper side of the sleeve a small fragment of a double tapestry-woven stripe of dark blue is sewed with stitches of yellow wool.

Size $3\frac{3}{4} \times 6$ in.

- 135 25/249/L (15. 325) Fourth or fifth century to 460
Piece of linen cloth, plain weave, natural color, drawn up by
linen cords and woolen yarn to form a baby's shoe. Badly
tattered.
Length of shoe about $3\frac{1}{2}$ in.
- 136 25/120 B/AH (80. 4) Coins, 385 to fifth century
Linen bag of coarse wefts woven over double warps; woven in
a straight strip which was doubled and sewed together on the
sides, with the fold at the bottom of the bag. The width of
the web (selvage to selvage) makes the depth of the bag, and
the length of the web is the width. A heavy cord looped at
intervals is sewed to the top. A small fragment of a handle
of twisted cords is attached to one side of the top.
Size $13\frac{1}{2}$ (doubled) \times $17\frac{1}{2}$ in.
- 137 25/244 B/A (76. 1) Fourth or fifth century to 460
Fragment of linen, natural color, plain weave, fine quality. On
the surface small pieces of stucco, painted red, and gilt had
been stamped, apparently forming a design, traces of which
appear on the cloth.
Size 7×8 in.
- 138 24/41/G (170. 4) Fourth or fifth century to 460
Tassel; heading of tapestry weave; yellow, with selvage on both
sides and a narrow black stripe on either end; also parallel
red threads inserted by a needle. The ends of the warps
(two-ply) form the brush of the tassel.
Length 10 in.
- 139 24/4036/F (197. 8 and 11) Fourth or fifth century to
460
Two fragments of linen fringe, probably from the ends of a cloth.
Narrow stripe of red wool woven just above the fringe. The
latter is merely the warp ends, but is knotted into groups by a
thread along the end of the web.
Lengths 12 and 13 in.

- 140 24/P/A = Granary (P/A. 12) Late third or early fourth century

Woolen cord resembling modern soutache braid. It is made of two two-ply cords (five threads in each strand) of undyed wool; cords covered by soft brown wool twisted around them. They are then laid parallel and attached to each other by fine invisible stitches of brown yarn.

Length about 8 in.

- 141 25/249/L (15. 236) Fourth or fifth century to 460

Fragment of a skein of brown yarn, fine, evenly spun, and closely twisted.

Length of threads about 14 in.

- 142 25/4009 A'/L (14. 10) Fourth or fifth century to 460

Small tapestry-woven pendant of soft wool in stripes of yellow, brown, red, and purple. Probably a part of a larger ornament.

Length 3 in.; width $\frac{1}{2}$ in.

- 143 25/4011/F (16. 21) Fourth or fifth century to 460

Two strands of dark brown yarn looped together; perhaps part of a skein. Wool soft, evenly spun, and well twisted.

Length 16 in.

PART II

TEXTILES ACQUIRED BY PURCHASE

INTRODUCTION

THE textiles described in the following chapters were acquired by purchase in the year 1929. Their provenience is unknown. The local dealer from whom they were obtained said that they had been found in the vicinity of Ashmunein, a statement which, in the absence of proof, carries little weight. In accordance with the custom of local dealers the pieces which appeared valuable were cut out from the garments or fabrics to which they belonged.

The collection contains a little over fifty different specimens, some of which are of widely separated dates and reflect various influences.

Nearly all the Egyptian textiles in the museums of Europe and America were produced after the beginning of the Christian Era, a few of them dating as early as the second century. The term "Coptic" is often loosely applied to all these stuffs which were woven prior to the time when the influence of the Arabs prevailed after their conquest of Egypt about the middle of the seventh century.

But during the first four centuries of the present era the dominant influence in Egypt was Greek and Roman, and textiles belonging to this period are classed as Graeco-Roman by students of the subject. Naturally the influence is shown in the decorative forms of the tapestries and figured stuffs. By the middle of the fifth century a decided change had taken place. The Graeco-Roman spirit had about disappeared from textile art. The old decorative forms were retained, but they had become lifeless and decadent.

A brief transitional period followed, when Christian symbols began to appear, along with the old and crudely imitated Graeco-Roman forms. The work of this period merges into that of the real Coptic period from the sixth century to the eighth.

As in all such changes, there is no distinct line of demarcation between the periods, and various influences entered into the development of the Coptic style. The Graeco-Roman decorative

forms persisted. Asiatic figure subjects, hunting scenes with mounted hunters and wild animals, were adopted; the patterns of figured silks were imitated. The most original features, however, are the Christian symbols and Biblical scenes.¹

In the collection under discussion there are a few pieces of the Graeco-Roman type. A considerable number bear a certain stamp of Coptic work, but lack many of the characteristics of that period. Except the small cross, No. 147, the two hieratic figures in Nos. 182 and 183 and the cross in the latter, there are no Christian symbols.

Representations of the human figure are likewise few; but with the exception of the two just mentioned and the three in No. 169, those that occur are of the debased type common in late Coptic textiles. There are a few figures of wild animals, but none of hunting scenes.

The types of design in the collection are numerous, and many of them are represented by one or two specimens only. For this reason the description of the collection is organized on the basis of technique rather than on that of design, though strict adherence to this plan has not been feasible in all cases.

¹ See A. F. Kendrick, *Catalogue of Textiles from Burying-Grounds in Egypt* (London, 1920, 1921, 1922), introductory chapters to Vols. I, II, and III.

CHAPTER VIII

TAPESTRIES

(Nos. 144-151)

A DEFINITION of the term "overlaid" as used in this text is given on page 28. All the specimens of this type in the collection, except Nos. 150 and 151 (both from the same cloth), are fine in the material used and in the execution of the designs, which have the delicacy of lacework.

Nos. 150 and 151 are of mixed technique, but since the overlaid designs are more prominent, they are included in this chapter.

OVERLAID DESIGNS

144 Complete stripe of rich purple from a small tunic of yellow woolen cloth of fine texture. A small fragment of the neck opening preserved. At either end of the stripe there is a pendant of leaf form.

The stripe has an elaborate overlaid design in fine yellow yarn. In the middle part of the stripe are three squares, one and three-fourths inches apart, the central one directly opposite the neck opening, and therefore on top of the shoulder. Each square has a delicate beaded border on the westwise side, and encloses an interlaced design.

On the remaining parts of the stripe the design is a chain of interlacing ovals and diamonds. The upper end of each design is surmounted by a standard of leaf form. The workmanship is exceedingly fine.

Length 32 in.; width 1 in.

PLATE XII

145 Tapestry panel of dark blue wool woven on fine linen warp, the weft passing over two and four warps alternately. Wefts fine; picks 16 × 120 per inch. The cloth, though having a heavy rib, is unusually soft and pliable. Selvage preserved on both edges. Border; scallops of the linen web projecting into the panel.

Entire panel covered with overlaid patterns in fine linen thread. Design: a surrounding band, seven-eighths of an inch wide, filled with a chain of circles, enclosing rosettes. A similar narrow band extends through the middle of the panel; on either side of it is a wider band filled with a fretwork pattern. Size $10\frac{1}{4}$ in. \times 3 ft. 10 in. PLATE XI

146 Panel of dull red-purple wool woven into a dark blue woolen cloth. On either side of the panel is a narrow purple stripe, outlined by a few threads of yellow weft and surmounted by a crest design. The panel is divided into three bands by two similar narrow stripes.

Central band covered by octagons, rosettes, and interlaced designs overlaid in fine yellow yarn; the centers and outlines of the rosettes are worked in linen. On either side of the central band is a narrower one, filled with a chain of flattened octagons enclosing four small circles. In each fourth octagon the four small circles are outlined in linen and surrounded by an interlaced design.

Entire panel covered by the pattern, which is intricate; fine work. The colors blue and purple are both of inferior quality and faded.

Size $7\frac{3}{4}$ \times 16 in. PLATE XIII

The dealer, in his efforts to restore this panel, had replaced worn-out parts of the border with pieces cut from other fragments, and had also inserted two rosettes and a center of another to fill holes. As the pieces so used are undoubtedly from fragments of this panel, they were retained in mounting it.

147 Oval of dark purple wool woven on linen warp. The woven design was perhaps a mass of leaf forms, but so much of the wool has perished that the pattern cannot be traced. The various parts of the piece are covered with an overlaid design. In the central part of the oval there is a small circle enclosing a cross woven of linen. The design is surrounded by a wave border, and the whole is enclosed by a purple band one-fourth inch wide.

Size $5\frac{1}{2}$ \times $6\frac{1}{2}$ in. PLATE XIII

148 Roundel of dark purple, with a crested border woven into a yellow cloth. Interior design: two narrow surrounding

stripes of light brown wool one-fourth inch apart. In center a rectangle enclosing a design of small rosettes. Rectangle surrounded by small polygons, each enclosing a rosette. Weftwise lines of the design are woven of light brown wool; all other parts are overlaid in light brown and yellow yarn.

Size $4\frac{1}{4} \times 4\frac{1}{4}$ in.

PLATE XIII

- 149 Dark purple inset woven into one end of a narrow scarf of brown wool; selvage preserved, but damaged on one edge. Inset surrounded by two narrow purple bands surmounted by a crested border. The purple bands are separated by a few threads of light-colored weft, the greater part of which has disappeared. Interior design: a central polygon enclosing an interlaced pattern; the surrounding space filled with portions of similar polygons and interlaced designs, in fine yellow yarn. The purple is stained and faded. Designs similar to those in the central band of No. 146, but work finer.

Size $6 \times 6\frac{1}{4}$ in.

PLATE XXIII

- 150-151 Four fragments evidently of the same web. Design: apparently a large polygon woven of black wool on yellow warps. In the interior of the polygon, of which only a small fragment is preserved, there was a mass of small figures — birds, fishes, and dogs woven of black wool, the pattern being filled in with linen. The anatomical details of the animal figures inserted in overlaid linen thread. Enclosing the central portion was an elaborate row of flattened octagons similar to those in the narrower bands of No. 146, except that at intervals a woven figure takes the place of the four small circles and interlaced pattern in the field of the octagons.

Surrounding the row of octagons is a band of black divided by a narrow stripe of yellow. Surmounting the black band is an irregular wave border, whose base is worked in parallel lines of yellow yarn.

Two fragments shown on plate.

Sizes $3\frac{1}{2} \times 5$ in.; $3 \times 5\frac{1}{2}$ in.

PLATE XIII

CHAPTER IX

TAPESTRIES

(Nos. 152-175)

IN THIS chapter are included pieces of whatsoever period in which the entire design is woven into and forms a part of the web. In a few specimens the overlaid technique appears in minor details; in others a few stitches are used in the same way. But these additions are inconspicuous and usually unnecessary, since the design is complete without them.

A few pieces are in the Graeco-Roman tradition. The larger number, however, are of the Coptic period and reflect some of the later influences.

In the greater number of pieces described in this chapter the design is woven of colored wool; linen is used for the actual weaving of the design only in Nos. 152, 153, 159, 162, 170, and 172.

INWOVEN DESIGNS

152 Roundel woven into a heavy linen cloth. Design woven in linen: a small central circle enclosing a rosette of four petals; surrounding the circle is a radiating floral pattern, all on a background of vivid red-purple wool, of which the greater part has disappeared.

Size 5 × 5 in.

PLATE XII

153 Part of a narrow tapestry stripe of rusty black woven into a yellow woolen cloth, perhaps a part of a tunic. Finely woven wave border. Design of delicate pattern, woven in linen, has almost disappeared. A circular pendant is suspended from lower end of stripe. Interior a circle enclosing a small indefinite design.

Length 7 in.; width 1 in.

PLATE XII

154 Red stripe woven into a yellow cloth. Pattern: a zigzag of yellow dots. In each angle of the zigzag there is a lunette. Colors yellow alternating with green. On either side of the

red stripe is a narrow stripe of black with a row of very small crosses through the middle.

Length $7\frac{3}{4}$ in.; width $1\frac{3}{8}$ in.

PLATE XIV

155 Tapestry roundel woven into a yellow cloth; probably a pendant, since a small portion of an apparent connecting stripe is preserved on edge of roundel. Design: a grotesque animal form woven in yellow, red, green, and dark blue. Design enclosed by a plain border of dark blue. Selvage edge of roundel dovetailed into the web. A few details are inserted in rope stitch.

Size $2\frac{3}{4} \times 3\frac{1}{4}$ in.

PLATE XIV

156 Tapestry band woven into a light brown cloth. Design: a row of four indefinite objects (possibly aquatic animals) woven in red, blue, green, and light yellow on a dark yellow background. Design bordered by two stripes of red, the outer one worked in scroll design, with linen thread.

For similar figures and coloring see H. Ernst, *Tapisseries et étoffes coptes*, Pl. 1.

Length $7\frac{1}{4}$ in.; width $2\frac{1}{4}$ in.

PLATE XIV

157 Tattered fragment; a red tapestry stripe woven into a tan-colored woolen cloth. Design (on the red stripe): a succession of aquatic birds and animals woven in red, green, and yellow, outlined with black. A few details inserted in stitches. Near the center of the fragment the procession of animals is interrupted by a circle, outlined with green rope stitch, enclosing a design of which only a few shreds are preserved.

A narrow stripe of light yellow on either side of the red one separated it from the tan-colored web, but it has almost disappeared, leaving the warp bare.

Length $11\frac{1}{2}$ in.; width 2 in.

PLATE XIV

158 Two tapestry bands. Design: an imitation of a Greek black-figured vase border pattern: a running scroll and floral pattern with wave border, black on a yellow ground, woven into a red cloth. The bands are surrounded by a narrow stripe of black and are separated by a stripe of red.

Design clumsily executed.

Length 6 in.; width (each band) $1\frac{5}{8}$ in.

PLATE XV

- 159 Two bands (perhaps for a sleeve) of dark purple woven into a web of undyed wool. The ends of the bands are woven into the web. A few threads of light brown linen are woven on either edge of the bands, and a wave border in linen is worked into the bands. Design: a series of conventionalized floral forms woven of linen. The threads, of both linen and wool, are carried across on the reverse side, between the figures.

Length $8\frac{3}{4}$ in.; width (each band) $1\frac{1}{4}$ in.

PLATE XV

- 160 Small rectangular inset of purple and yellow wool. Design: a circle of purple enclosing scrolls and floral forms, in the center of which is a small circle enclosing a flower. The spandrels outside the larger circle are filled with scrolls of purple.

The weftwise sides of the panel have a delicate crested border. On the adjacent sides there is a fine serrated pattern surmounted by a dentate border.

Size $3\frac{1}{2} \times 4\frac{1}{4}$ in.

PLATE XV

- 161 Stripe of dark purple and yellow woven into a yellow cloth; a part of a tunic; a fragment of the neck opening preserved. Two lines of rope stitching of linen divide the stripe into three rectangles. Central rectangle a purple ground, into which is woven in yellow wool a grotesque running figure. The adjoining rectangles have a yellow ground, into each of which are woven in purple a running animal figure and a figure similar to the one in the central rectangle. A few details are inserted in coarse linen thread. The stripe is bordered by a scroll design.

Suspended from the lower end of the stripe is a pendant of leaf form, in which was woven a purple design, now fragmentary. For a similar design see the small piece in the central part of Pl. 15, in Ernst, *op. cit.*

Length 12 in.; width $1\frac{1}{4}$ in.

PLATE XII

- 162 Three fragments of a rich red tapestry stripe woven on linen warp. A border of geometric forms in green, red, and dark yellow is preserved on one edge of two of the fragments. Into the central section of the band elaborate leaf and other forms are woven of wool in dark yellow, red, black, and two

shades of green; and of undyed linen. The pieces are too small to show the composition. The band when intact was probably five and one-fourth inches wide. Selvage preserved on one side.

Sizes of fragments $4 \times 4\frac{1}{2}$ in.; $2\frac{1}{2} \times 4$ in.; $3\frac{3}{4} \times 8$ in. PLATE XVI

- 163 Two fragments of a tapestry stripe into which are woven leaf and plant forms and wild animals. Colors dark blue, black, red, green, and yellow on a dark madder background; warp yellow wool; an imitation of a forest. On either side of the band is a narrow blue stripe which was originally surmounted by an elaborate crested border of dark blue on a background of undyed wool. In places the weft yarns were carried across between the figures on the reverse side of the fabric.

Sizes of fragments $3\frac{1}{2} \times 7$ in.; $3\frac{1}{2} \times 9$ in. PLATE XVI

This piece is one that suffered unusual damage from the dealer's efforts. These two fragments, and No. 164, together with numerous bits of unrelated border, as well as a few fragments belonging to this band, were patched together into a long strip by being pasted with stiff flour paste, which could not be removed, to a backing of old pieces of cloth. The paste was spread on the *face* or right side of some of the fragments. This was done with one of the fragments of No. 163, so that on Plate XVI the reverse or wrong side of that fragment appears. The crested border belonging to the band was ruined by the paste.

- 164 Tattered fragment of a tapestry stripe woven so that the selvage is on the sides instead of on the ends of the band. The design, accordingly, runs crosswise of the band instead of lengthwise, as is usual. The band is woven in sections of different colors. One narrow section of red and two wider ones of dark yellow and deep madder are preserved. In each section there is a separate composition; a tree or trees and an animal.

The weaving, color, and leaf forms are similar to those of No. 163. A border of dark blue and undyed wool (decorative pattern) was woven to the selvage edge of the band.

Length 17 in.; width 3 in.

PLATE XVI

- 165 Two pieces of stripes (probably separate stripes but of same pattern) woven into a dark brown cloth of tabby weave. Both web and stripes are of flimsy texture.

Pattern: a central row of dots, composed of concentric rings of yellow, green, blue, light brown, and red — the color combination varying in each dot. Bordering the row of dots is a narrow stripe of brown, outlined with yellow. Outer border checks of red, blue, green, yellow, and light brown. The selvage is preserved on one end of each fragment. Accompanying these fragments is a strip from the end of a web, probably the end into which these stripes were woven; selvage preserved on one edge, also the cord to which the warp threads were attached. About five-eighths of an inch from the cord are two narrow yellow stripes. Weft yarns carried across on the reverse side between the figures of the pattern.

Length 12 in.; widths $1\frac{1}{2}$ and $1\frac{1}{4}$ in.

PLATE XV

- 166 Fragment of a roundel woven into a yellow cloth. Design: a clumsy plant form woven in yellow, red, and green. Border a double band of dark purple (probably one of the madder shades) surmounted by a scroll border, details in linen thread. Late and very coarse work.

Size $3 \times 3\frac{3}{4}$ in.

PLATE XXIII

- 167 Two pieces of a stripe of red and yellow woven into a cloth, of which the warp is red; the weft dark blue; tabby weave.

Design: a running floral pattern woven of yellow, much of which has disappeared, leaving the warps bare.

A narrow strip of web of dark blue weft and red warp is preserved on one side of each fragment of the stripe, but it is impossible to say whether or not the whole web was so woven. Design is woven by the tapestry process, but weft is of hard twisted yarn and not closely beaten in, so that the fabric has not the firmness characteristic of tapestry-woven patterns.

Length 12 in.; width (of tapestry design) $1\frac{3}{4}$ in.

PLATE XXI

- 168 Small oblong inset woven into an undyed woolen cloth. About one-fourth of the inset missing. Design: one or possibly two creatures of reptile form, yellow, with outline and claws of black. Between the two objects is a flower of red and green; background of the composition madder. Details

in stitches of black yarn. Design surrounded by a narrow border of black.

Size $1\frac{3}{4} \times 2\frac{1}{2}$ in.

PLATE XVII

169 Tapestry band of black, now rusty and stained, woven into a yellow cloth; selvage on both edges preserved. On either side is a crested border. At each end of the band there is a one-inch border of the dark color, divided at intervals of one-fourth inch by pin stripes of the yellow weft. The cloth is well woven and of fine texture; picks 26×160 . Selvage ends of band sewed to the web.

The interior of the band is a mass of figures which closely fill the space, but without other obvious composition. There are three nude human figures, three dogs (two running and one crouching); another animal, perhaps a hare, crouching; nine birds and the same number of fishes; five lotus branches, each with two full-blown flowers and a bud.

The figures are small — the human figures being one and one-half inches in length, the others varying from three-eighths to one and one-fourth inches. The general movement is from the upper left to the lower right-hand corner; five of the birds, however, face in the opposite direction.

Owing to the fineness of the weft all the minute details, such as the beaks of the birds and the slender stems of the lotus, are rendered with extreme delicacy.

The piece is an imitation of silk weaving, and in the multitude of figures and their disposition it suggests the Persian brocades and Indian prints of a later date. The treatment is rather freer than in the Asiatic patterns, and the lotus takes the place of the pine and cypress.

The poor quality of the dye contrasts painfully with the exquisite quality of the design and workmanship.

Size 3×8 in.

PLATE XVII

170 Short band of dark, rich purple woven into a woolen cloth, perhaps undyed; a few shreds only adhere to the edges of the band. Texture fine.

The band is divided into three rectangles. The central one is bordered, on each of the weftwise sides, by a narrow stripe of linen. On the adjacent or warpwise sides is a corresponding stripe, of rope stitch in linen. Design: a circle of rope

stitch enclosing a radiating, conventionalized floral pattern. The pattern is woven of linen in such a manner that portions of the design have the appearance of rope-stitch embroidery. The two rectangles on either side of the central one have, on each weftwise side, a narrow purple stripe outlined by a few threads of linen, woven in the rope-stitch effect mentioned above. These stripes are surmounted by a very delicate wave border.

A stripe of the same width and treatment as those just described passes through the middle of each side rectangle, dividing it weftwise into two secondary rectangles. In each of the secondary rectangles is a floral design which is treated in the same manner as the design in the central rectangle. Weaving of fine quality.

Size $2\frac{1}{2} \times 5$ in.

PLATE XV

171 Fragment of undyed woolen cloth, triple selvage on one side, into which was woven a small roundel, with border of embroidery stitches of dark purple wool. Only a few shreds of the interior of the roundel are preserved. The field appears to have been dark madder; in it there was a purple design with a wave border. Above and below the roundel is a figure of a bird; perhaps there was a similar one at the right and left. There are three Coptic letters at the left of the roundel and apparently five at the right, but their significance, if they have any, is obscure. Preceding the letters at the left is a bird similar to the one above the roundel. There are a few shreds of some object after the letters at the right.

Size (of fragment) 5×8 in.

PLATE XVII

172 Fragmentary piece of a dark stripe, perhaps a shade of purple, but now brown, woven into a light brown cloth.

The design, woven in linen, is a plant between two rectangles: only a few shreds of the upper rectangle are preserved and the lower one is so tattered that the pattern is not recognizable.

Suspended from the end of the stripe is a pendant of leaf form.

Design: a decorative line composition woven in linen. Both the stripe and the pendant have a scroll border.

On the right-hand side of the stripe there is a fragment of a heavy band of chain stitching in red yarn. (See Nos. 182 and 183.)

Length $9\frac{1}{2}$ in.; width 2 in.

PLATE XXI

- 173 Part of a tapestry stripe, woven into a yellow woolen cloth of fine texture; probably a part of a tunic. Color purple of poor dye, now faded to a rusty brown. Design: a succession of indefinite shapes similar in form to those of No. 156. Details inserted with linen thread in broken lines. Border three stripes of dark color; on the central one, the outer edge of which is serrated, there are three rows of linen thread in broken lines. At the end of the band a scroll pattern is worked into the border. A pendant of leaf form is suspended from the end of the stripe. Design: leaf forms in purple on a yellow ground; scroll border.

This band is of much finer quality and workmanship than those of Nos. 184 and 185.

Length $10\frac{1}{2}$ in.; width $2\frac{1}{2}$ in.

PLATE XXI

- 174 Inset of leaf form with heavy stem woven into a yellow cloth. Design surrounded by a band of purple with a scroll border. The band is divided through the center by a narrow stripe of the weft. Central part of the design filled by a scroll pattern of purple on yellow background. From this pattern a running scroll extends through the center of the stem. The scrolls, both of the central pattern and of the border, are outlined in the weaving with the simulated rope stitching heretofore described. See No. 170.

Length $6\frac{1}{4}$ in.; width (maximum) $3\frac{1}{4}$ in.

PLATE XXII

- 175 Portion of a stripe of yellow and light brown woven into a light brown cloth. Design: a central stripe of yellow wool in which lozenges are outlined in light brown. Each lozenge encloses a conventionalized floral design, woven of light brown on a yellow background. The triangles between the lozenges are filled by a scroll pattern. Border a narrow light brown band, surmounted by a yellow one into which a design of overlapping curves and foliated crests is woven. The entire design is outlined in the same manner as that of No. 174. The two pieces are of the same type throughout. (At one end of this stripe there has been a modern attempt to improve the color.)

Length $10\frac{3}{4}$ in.; width $3\frac{1}{2}$ in.

PLATE XXII

CHAPTER X

TAPESTRIES

(Nos. 176-192)

A MIXED technique, in which the main design is inwoven and the details are overlaid or else inserted, is represented in this collection by seventeen pieces.

Linen is used for filling in the pattern of No. 178 and for weaving a few minor parts of No. 181. With these two exceptions all the weaving of the actual web and the larger part of the overlaid details are of wool.

Several of the specimens present unusual features which are pointed out in the descriptions.

INWOVEN DESIGNS WITH DETAILS OVERLAID OR INSERTED IN STITCHES

176 Part of a tapestry stripe of undyed wool with figures woven of bright purple. Design: a procession of attenuated human figures; large heads; features and headdress worked in undyed wool; bodies sketchy. Figures advance to the spectator's right (their left), each holding in the extended left hand a large ring (wreath?) and in the upraised right hand a small object, perhaps a standard. At one end of the fragment the design is interrupted by a circle enclosing a figure, only a small portion of which is preserved.

On either side of the design is a narrow stripe surmounted by a crested border.

A few weft yarns of both colors are carried across on the reverse side between the figures. In places the yarn is drawn so tightly that the cloth is puckered. See No. 178 for a possible explanation of this defect.

Size $1\frac{5}{8} \times 12\frac{1}{2}$ in.

PLATE XVIII

177 Two tapestry bands of dark, rich purple and undyed wool woven into a narrow yellow woolen cloth; both selvages preserved. Width $7\frac{5}{8}$ in.

Design: same as that of No. 174. Border: a narrow purple strip surmounted by a crested border.

Ends of bands woven into the web and the joining covered by rope stitches of wool.

Threads carried across on reverse side, as in No. 174, producing an even greater amount of puckering.

Length (of bands) $5\frac{3}{4}$ in.; width $2\frac{1}{2}$ in.

PLATE XVIII

178 Wide tapestry stripe of black wool and undyed linen woven into a yellow woolen cloth, perhaps a part of a tunic.

Design: three bands of figures, one above another, of the same type as those of Nos. 176 and 177. Details worked in linen instead of wool, as in the two previous examples. The figures advance to the spectator's left, which is the reverse of the movement in Nos. 176 and 177, and the positions of the objects they carry are correspondingly reversed. The threads are carried across between the figures, as on Nos. 176 and 177. The thread is of linen, which does not shrink, and there is no puckering of the fabric, which indicates that the undyed yarn used for inserting the details of Nos. 176 and 177 had not been previously shrunk, as had the dyed wool composing the main parts of the design, and that the puckering was produced by subsequent shrinkage. Border similar to that of No. 176.

Length $8\frac{1}{2}$ in.; width 4 in.

PLATE XVIII

179 Two tapestry bands of purple and undyed wool woven into a yellow woolen cloth of same width and color as No. 177, but the purple dye is of poorer quality.

Design: a row of birds' heads; two attached and facing in opposite directions, alternating with a single one facing to the right.

Border like that of No. 177; details treated in same manner; threads carried across as in Nos. 176 and 177, giving the same puckering of the fabric. Ends of bands treated in same manner as those of No. 177.

Length $5\frac{5}{8}$ in.; width $1\frac{7}{8}$ in.

PLATE XIX

180 Two tapestry bands of dark color, perhaps an inferior quality of purple (now a rusty black) and undyed wool woven into a narrow light brown woolen cloth. Width (cloth puck-

ered as described below) six and one-fourth inches. Design: probably a procession of figures, but the band is drawn up like seersucker, or as if tightly shirred, making it impossible to determine the pattern. The yarns of the weft and of the details form a heavy mat on the reverse side. Work coarser than that of Nos. 177 and 179.

Length (as drawn up) $4\frac{1}{2}$ in.; width $2\frac{1}{2}$ in.

PLATE XIX

181 Part of a tapestry stripe of yellow wool, figures dark purple, woven into a brown web.

At one end of the fragment, and occupying about half its length, is an elaborate panel. Design: an arched niche or sanctuary. Outer member of the arch of purple with floral forms, partly woven and partly inserted in stitches. Inner member light wool, into which a guilloche is woven of purple wool and outlined in bleached linen.

The niche encloses a grotesque figure with a doglike face. Figure woven of yellow wool on a purple background. Features and other details inserted in red and green yarn.

The remaining half of the panel is filled with small figures of fishes, flying birds, reptiles, and dogs, all woven of purple wool, with details in linen thread. None of the figures is more than three-fourths of an inch in length, and many are less. They fill the space, but there is no attempt at composition.

For a somewhat similar design, but without the arch, see A. F. Kendrick, *Catalogue of Textiles from Burying-Grounds in Egypt* (Victoria and Albert Museum), Vol. III, No. 747, Pl. XIV.

Border: a narrow stripe of purple surmounted by a row of convex curves each holding a dot of purple.

Wool drawn and puckered, but more by the weaving than by the inserted threads.

Length 10 in.; width $4\frac{1}{2}$ in.

PLATE XIX

182 Elaborate red-purple stripe woven into a yellow cloth, perhaps a part of a tunic. The stripe is much decayed and stained. Design: at top a rectangle enclosing an oval of purple, within which is a tree woven in purple, with details inserted in undyed linen and green yarn.

Below this design is a human figure with the left hand upraised,

the right hand at the side, the left foot advanced. Head surrounded by a nimbus of linen stitches. Features and details of garments are of green yarn. The right leg is indistinct and all the design below the figure is so stained and defaced that interpretation is impossible. The whole design is surrounded by a guilloche surmounted by a heavy crested border. Suspended from the lower end of the stripe is a circular pendant; central design a tree woven of yellow wool, with details in green. A guilloche surmounted by a wave border surrounds the pendant. The band connecting the pendant with the panel has a clumsy scroll-like projection on either side. A guilloche passes through the middle of the band.

The upper or selvage edge of the panel is covered by heavy button-hole stitching in red yarn. A thick band of double chain stitching of the same kind of yarn extends down the left side of the stripe.

Length 14 in.; width $4\frac{1}{2}$ in.

PLATE XX

183 Stripe similar to that of No. 182 and presumably from the same garment. General design the same as that of No. 182, but attitude of the human figure slightly different: right hand upraised; head probably had a nimbus but only a few stitches remain. The figure seems to be striding to the left; on either side of it are palm branches embroidered in light linen thread.

The pendant and the connecting band are like those of No. 182, but the central design of the pendant is a yellow tapestry-woven cross, with one of the same shape embroidered in green superimposed. The cross is of a type which appears on Coptic stele; likewise the palms embroidered in the upper part of the stripe. See W. E. Crum, "Coptic monuments," *Catalogue général des antiquités égyptienne du Musée du Caire*, Nos. 8410, 8449, and 8454.

The upper edge of this stripe is treated in the same manner as that of No. 182, but the band of red woolen stitching extends along the right-hand side instead of the left, a further indication of its connection with No. 182. Both pieces show decided Byzantine influence.

Length 10 in.; width $4\frac{1}{2}$ in.

PLATE XX

184 and 185 Fragments of two stripes woven into a yellow woolen cloth of fine texture. They are apparently parts of the same garment (a tunic). Color dark purple of poor quality.

Design: two rectangles separated by a plant form woven of yellow wool. In each of the rectangles two birds' heads and perhaps reeds are crudely embroidered in coarse white linen. The design has a scroll border outside which is a narrow stripe of purple.

A clumsy pendant of leaf form is suspended from the lower end of each stripe. One pendant has fragments of a scroll border and of a design, a plant in a jar, which is partly woven and partly made by embroidery in white linen. The other pendant shows no traces of embroidery.

Lengths $8\frac{1}{4}$ and $9\frac{1}{2}$ in.; width 2 in.

PLATE XXI

186 Small tapestry inset, purple, of poor dye, woven into a web of undyed wool. Selvage edges of inset woven into the web.

Design: a central oval of purple into which is woven an eight-pointed figure in undyed wool. Oval surrounded by a half-inch band of undyed wool, into which circles and scrolls of purple are woven. Workmanship poor.

Size $2\frac{1}{4} \times 2\frac{3}{4}$ in.

PLATE XXII

187 Fragment of a roundel of rich purple and undyed wool.

Design: conventionalized floral forms radiating from a purple center, in which there is a decorative figure enclosed in a circle of rope stitching. Border a purple band surmounted by a wave pattern.

Size $3\frac{3}{4} \times 4\frac{1}{2}$ in.

PLATE XXII

188 Fragment of a roundel of dull red-purple and undyed wool.

Design: a central circle enclosing a bird with wings displayed. Surrounding this circle is a band of fishes, birds, and leaf forms. In the middle of the preserved portion of the band and directly to the left of the central design there is a debased human figure with a large head and outstretched arms.

Size $3\frac{1}{4} \times 5$ in.

PLATE XXII

189 Part of a red tapestry-woven band belonging to a yellow woolen tunic: a fragment of the neck opening preserved.

Design: a running floral pattern, with a stripe of red on

either side surmounted by a crested border. Details of border and of each alternate leaf in the running pattern are overlaid with fine yellow yarn.

Length 16 in.; width $1\frac{1}{2}$ in.

PLATE XXII

- 190 Small roundel woven in black and red-purple (both colors faded) into a yellow cloth. Through the middle of the roundel, forming an axis, is a row of grotesque figures with human features, placed one above another. On either side of this axis, and facing it in balanced composition, are birds and figures similar to those in the axis. The figures in the upper part of the field are all black; several in the lower part are purple, but the use of color is casual rather than in conformity to a design. The design is bordered by a one-fourth inch band of black. About one-third of the roundel is destroyed. For other examples of this composition — figures in balanced arrangement on either side of an axis — see A. F. Kendrick, *Catalogue of Textiles from Burying-Grounds in Egypt*, Vol. III, Nos. 634, 636, 639, and 642; also W. F. Volbach, *Late Antique Coptic and Islamic Textiles of Egypt*, Pl. 49.

Size $3\frac{1}{8} \times 4$ in.

PLATE XIV

- 191 Small fragment of woolen cloth, tapestry weave: a red stripe bordered on either side by a narrow, light brown one. A wave pattern is embroidered on the stripe in linen. On one side of the stripe there is a strip of brown web and on the other, one of yellow.

Size $1\frac{5}{8} \times 7$ in.

- 192 Fragmentary tapestry panel of purple with a fine wave border, woven into a cloth of undyed wool.

Design: apparently a central figure within an oval which was surrounded by successive enclosing rectangles, each outlined by a narrow stripe of purple. The space between the purple stripes is woven in bits of purple of irregular shape, which are stitched with linen thread and drawn up, giving a mottled effect of purple and light color, but no design. In each corner there is a hexagonal medallion of red enclosing a star-shaped figure, perhaps embroidered in yellow wool and undyed linen. Only three medallions preserved.

Size $7\frac{1}{4} \times 9\frac{1}{2}$ in.

This piece received even worse treatment at the hands of the dealer than did Nos. 163 and 164. In his efforts to restore the missing parts of the panel he had pasted fragments of different types into the vacant places. All the pieces, including those of the panel itself, were so tattered that no attempt was made to undo his work.

CHAPTER XI

WOOLEN CLOTH

THREE of the pieces described in the paragraphs which follow are of the brocade type of weaving. The fourth piece is embroidered. The fabrics of all are well preserved.

BROCADE WEAVES AND EMBROIDERY

- 193 Woolen band of tabby weave two and one-half inches wide. Color a rich red-purple with a stripe of green warp one-half inch wide on either edge. The pattern is of flax woven in triple thread; the weaving is in the manner of brocade, i.e. with the threads carried across on the wrong side between the figures.

Design: a zigzag composed of double scrolls; the triangular spaces filled with figures of conforming shape. Decorative figures of linen woven on the green stripe along the edges of the band.

Length $12\frac{1}{4}$ in.

PLATE XXIII

- 194 Four pieces of a red woolen band, tabby weave, two and three-eighths inches wide. Across the band in alternate rows of three and two are heart-shaped designs woven of linen in the same manner as the pattern of No. 191. Many of the figures have disappeared from some of the pieces.

PLATE XXIII

Lengths two pieces $12\frac{1}{4}$ in. each; two pieces 7 in. each.

- 195 Woolen cloth of a clear, well-preserved shade of dark blue, plain weave. Geometric figures and scrolls inwoven in heavy fiber in the same manner as in Nos. 191 and 192. In the geometric figures there is a small center of rose-colored wool. Owing to the stiffness of the fiber the cloth could have been used only for hangings or decorative purposes.

Size $3\frac{3}{4} \times 7$ in.

PLATE XXIII

196 Dark blue woolen cloth, plain weave, embroidered with yarn in diagonal rows of one-half inch squares, which are one and one-fourth inches apart. Colors light green, rose, madder, and yellow.

Connecting the small squares and forming a diaper pattern are bands three-eighths of an inch wide, composed of small designs worked in threads of yellow fiber. Only traces of the designs remain. Each diaper enclosed a small floral design, but nearly all of them have disappeared.

In its general features this pattern resembles some of those in late Greek silk weaving and in the Coptic silks from Achmîm.

See Otto von Falke, *Decorative Silks*, Figs. 9, 11, and 38.

Size $5\frac{1}{4} \times 10$ in.

PLATE XXIII

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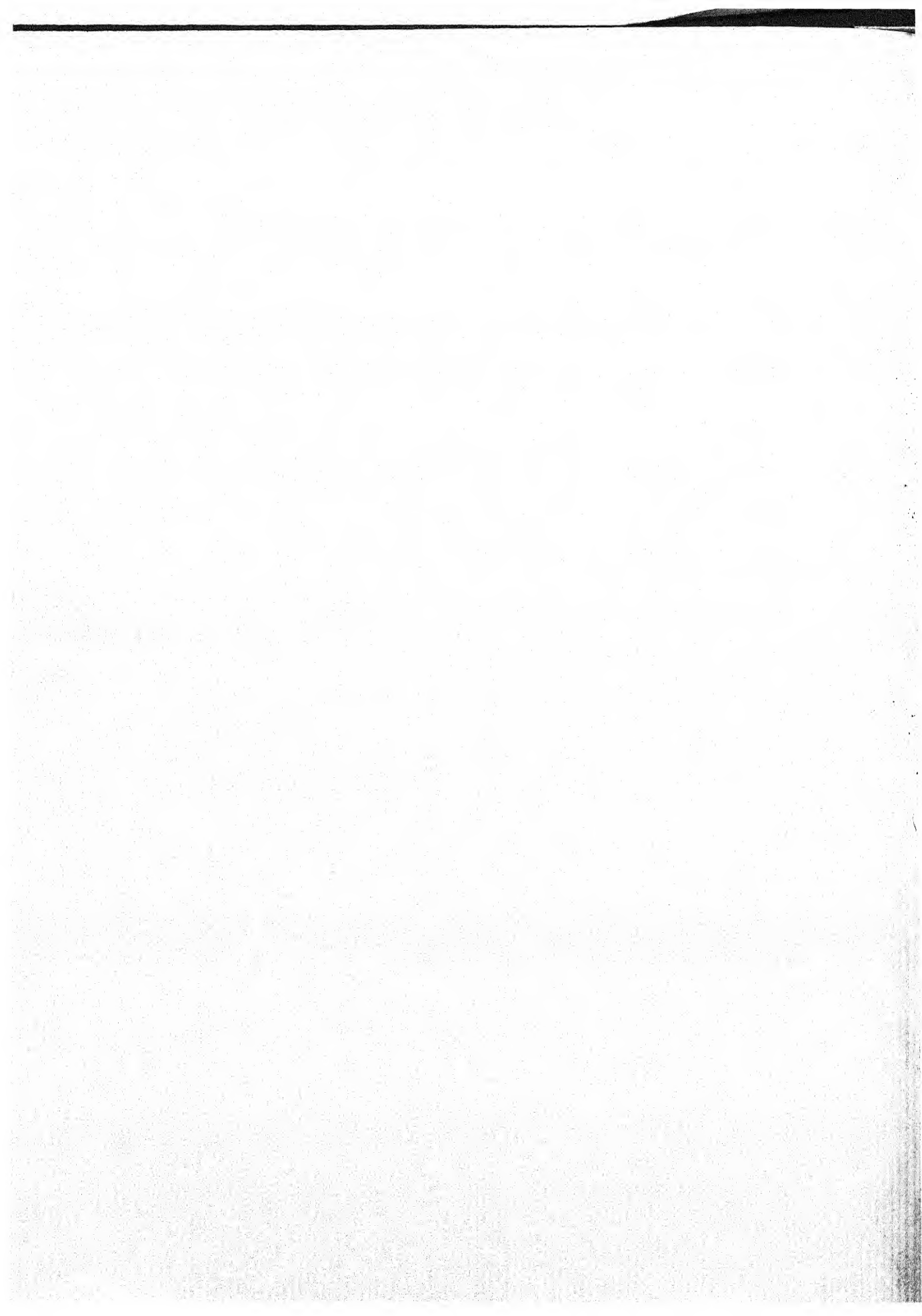
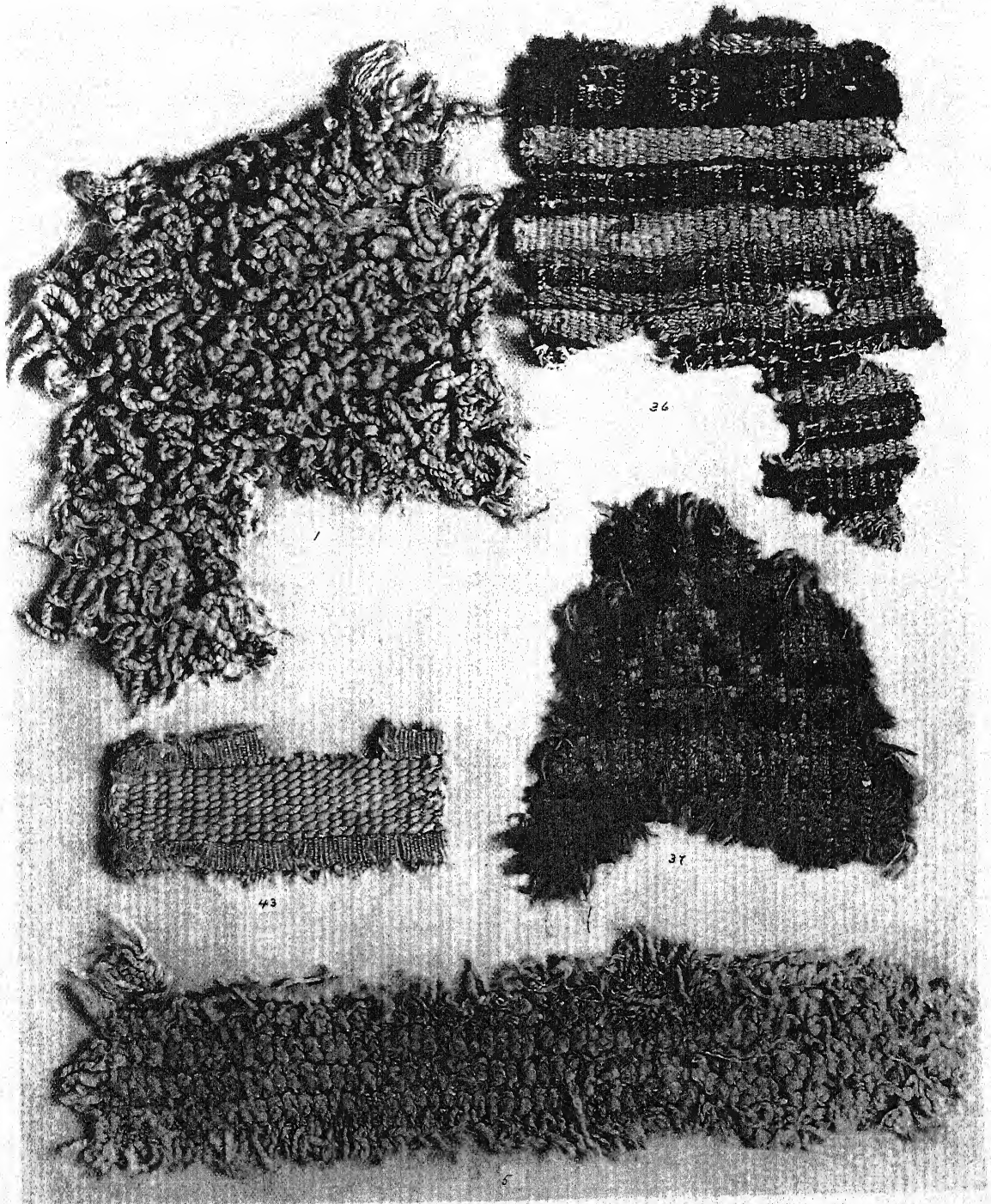
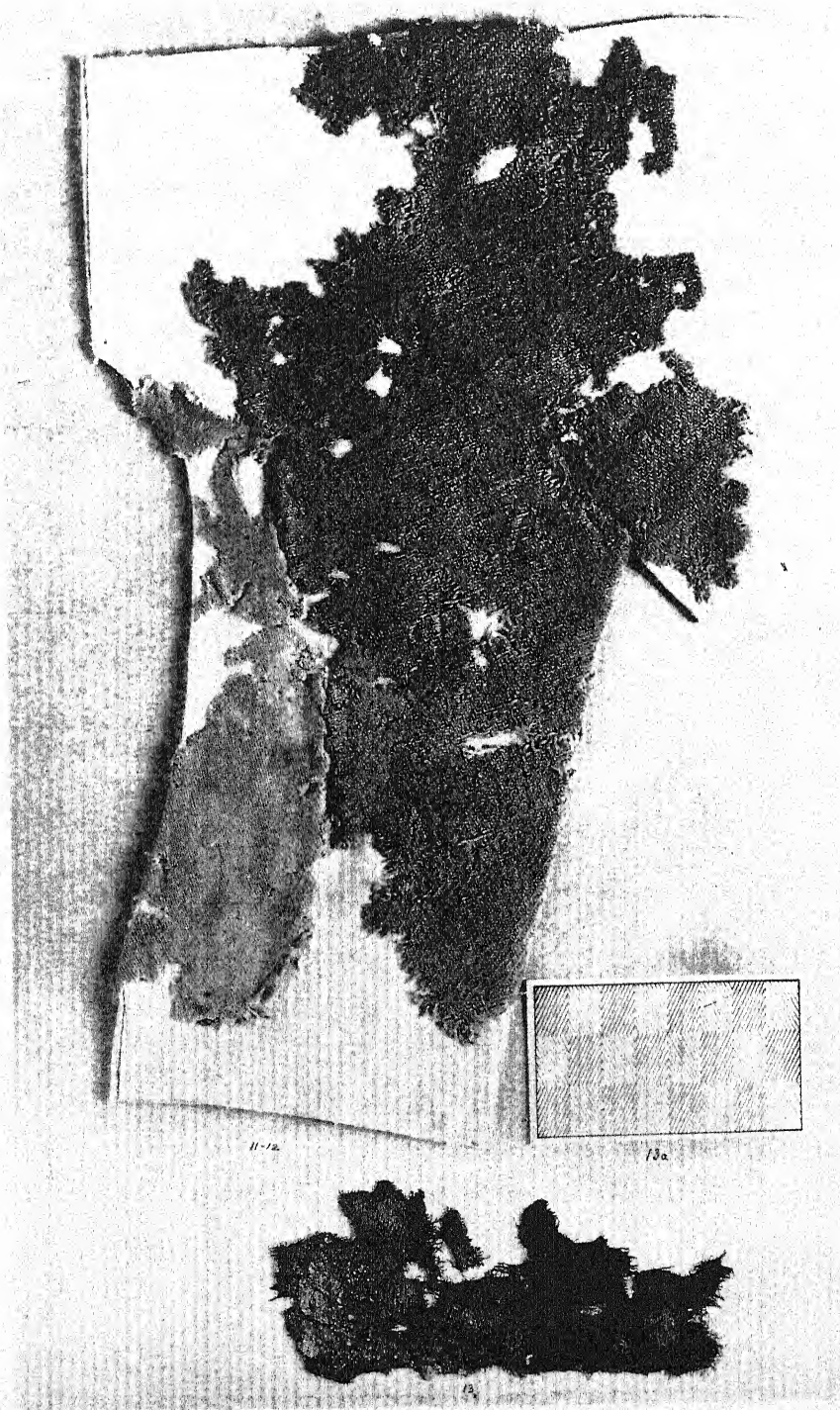


PLATE I



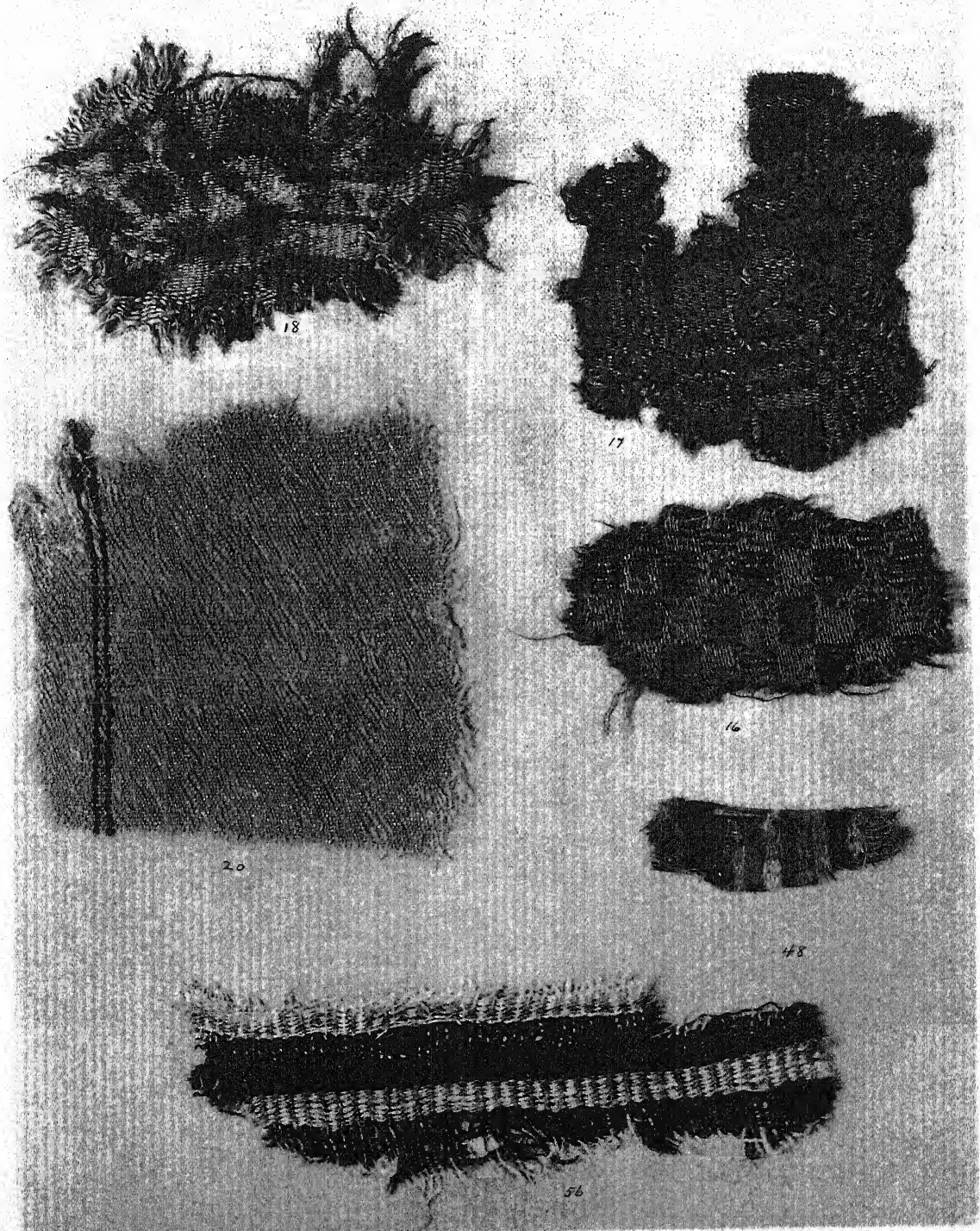
1. Fragment of loop weaving 5. Fabric with pile produced by knots of yarn 36. Heavy striped fabric; designs in linen thread 37. Inlaid pattern 43. Portion of a band or inset

PLATE II



11-12. Two pieces of serge or twill 13. Fragment of fancy twill
 13a. Drawing showing the pattern of No. 13

PLATE III

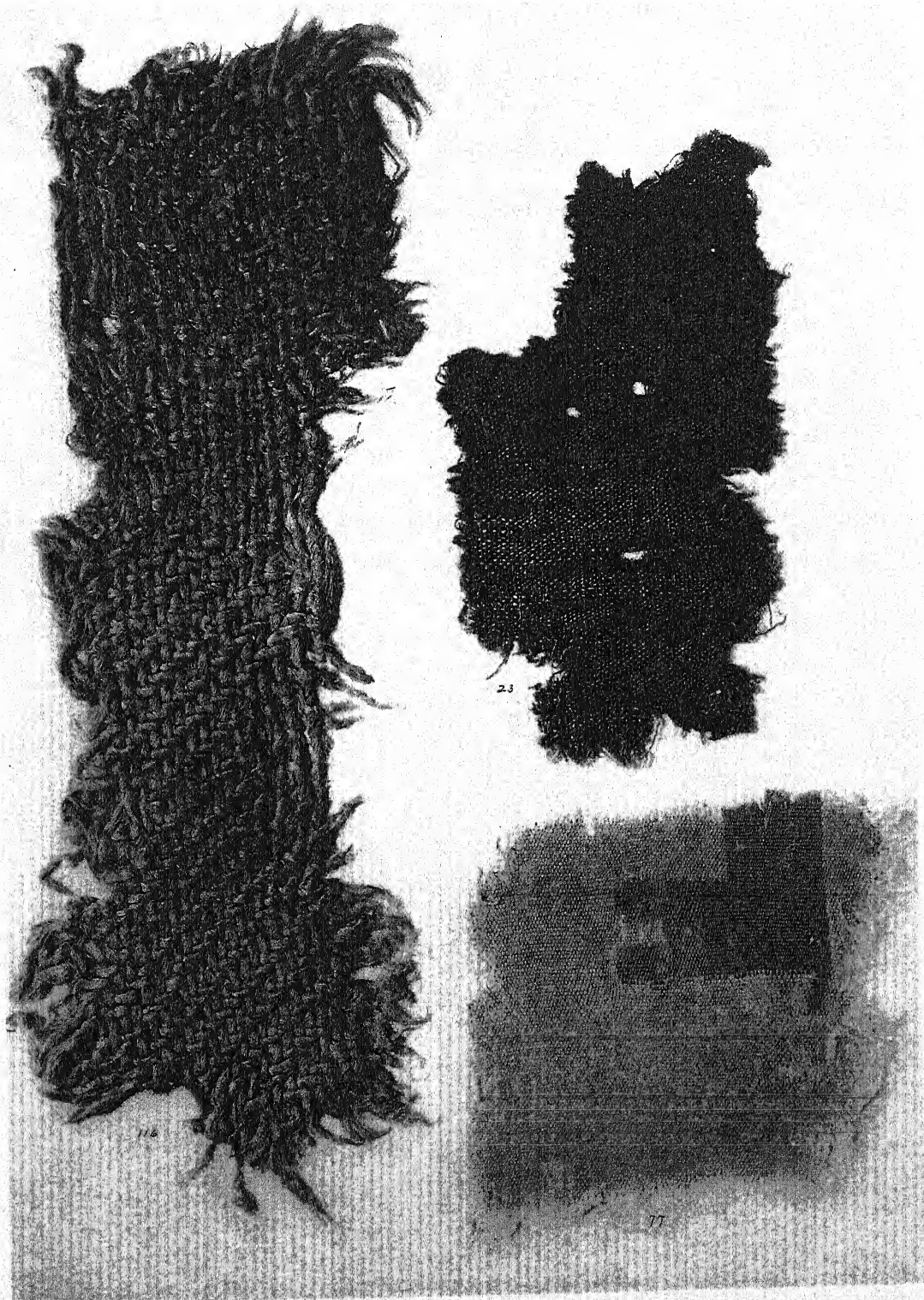


16, 17, 18. Draw-loom weaving
over split reeds

20. Fabric with rippled surface
56. Fabric with fancy stripes

48. Wool woven

PLATE IV



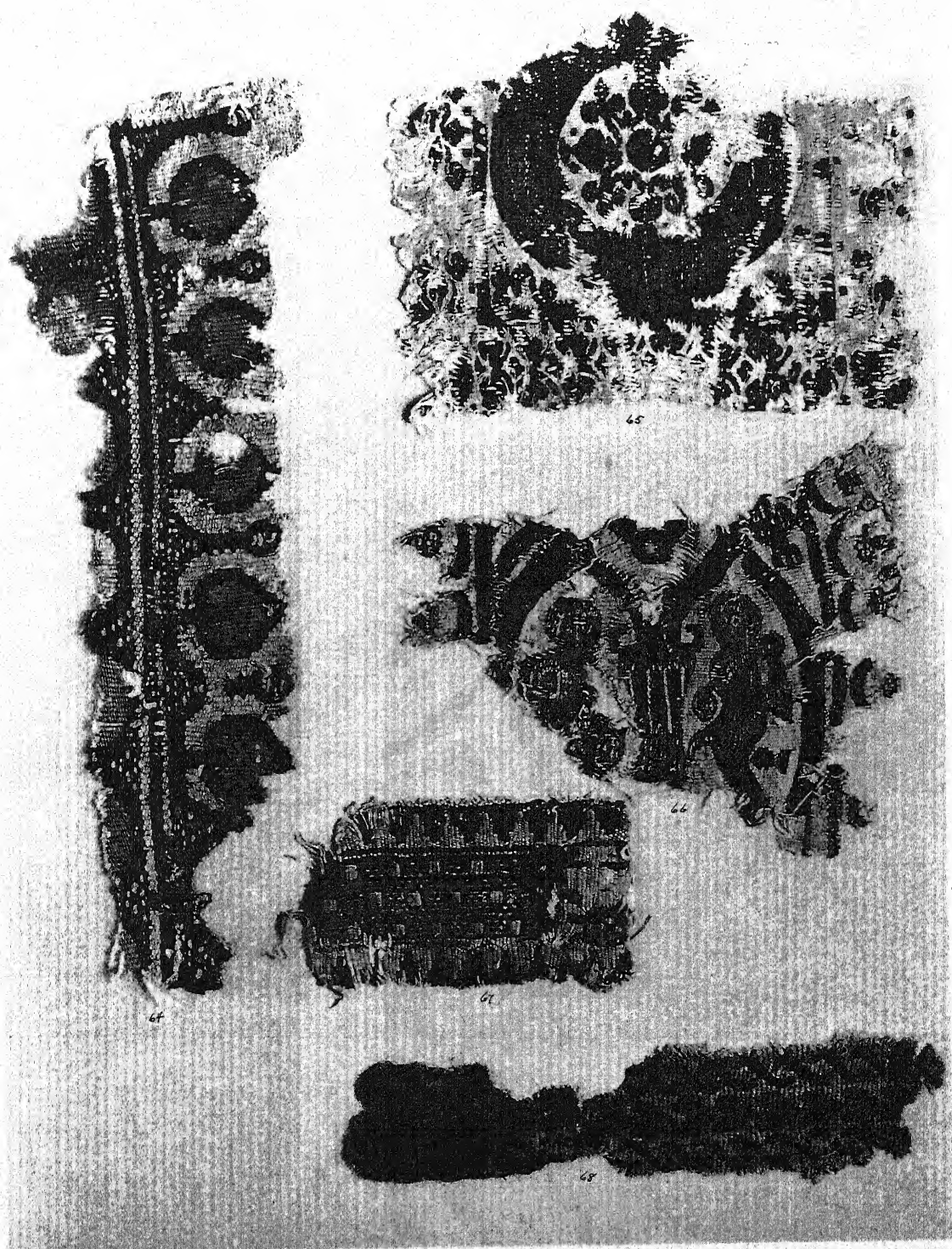
23. Fabric with invisible stripes

77. Tapestry stripe

116. Haircloth; twill weave



PLATE V

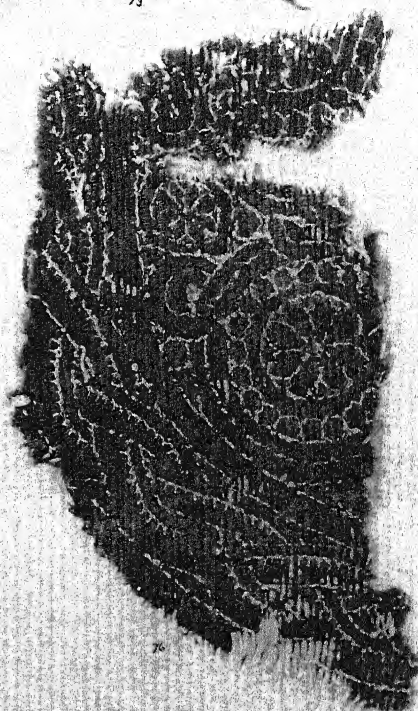
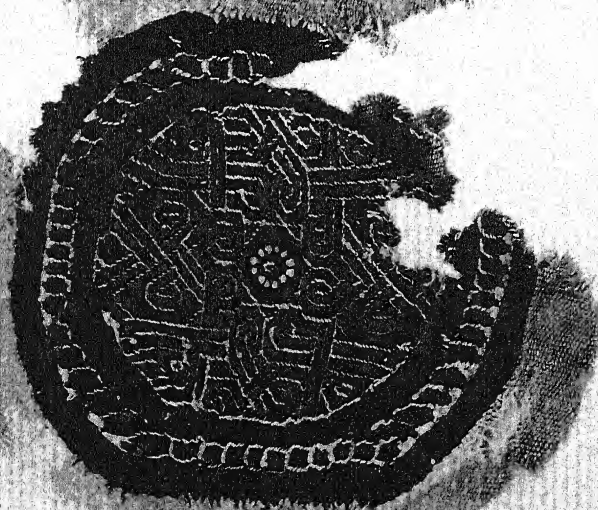
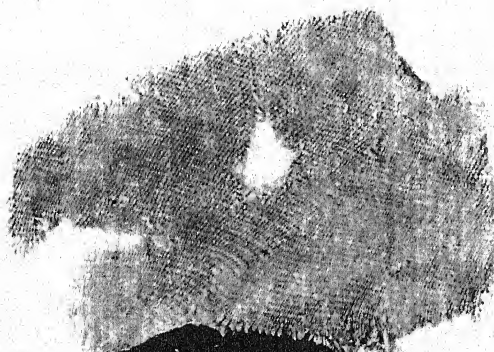
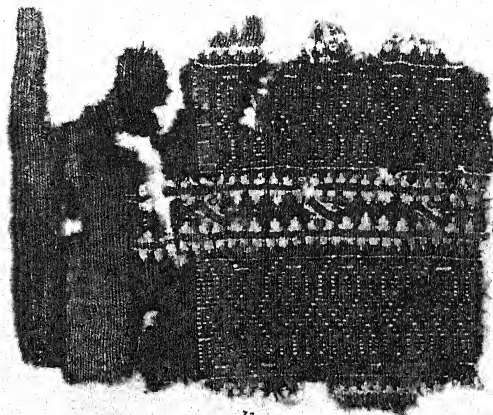
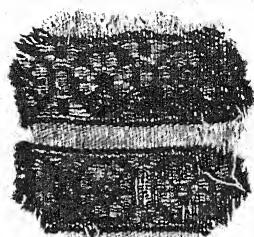
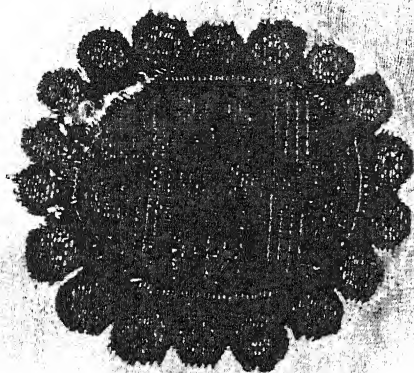


64. Tapestry border

65, 66. Tapestry panels

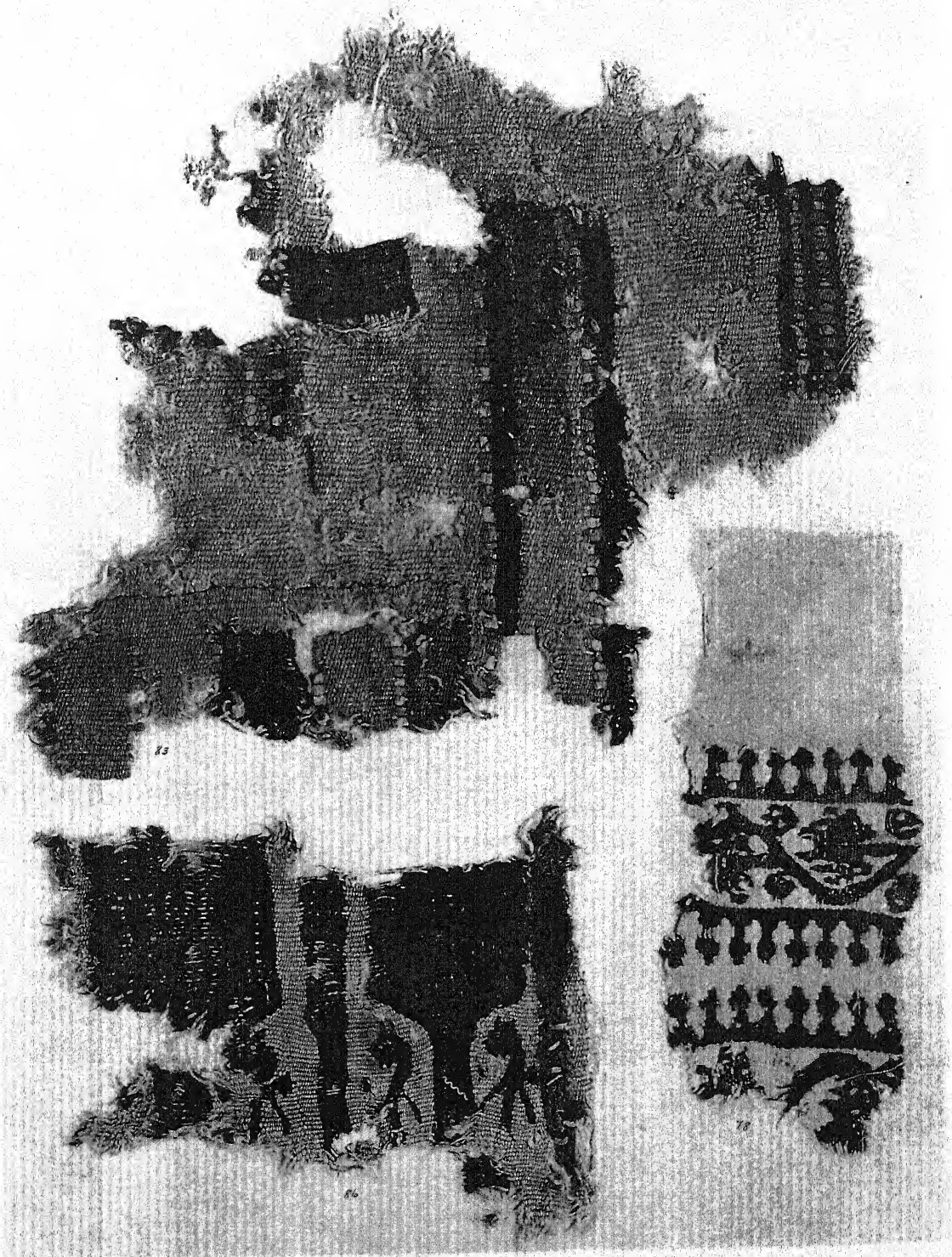
67, 68. Tapestry bands

PLATE VI



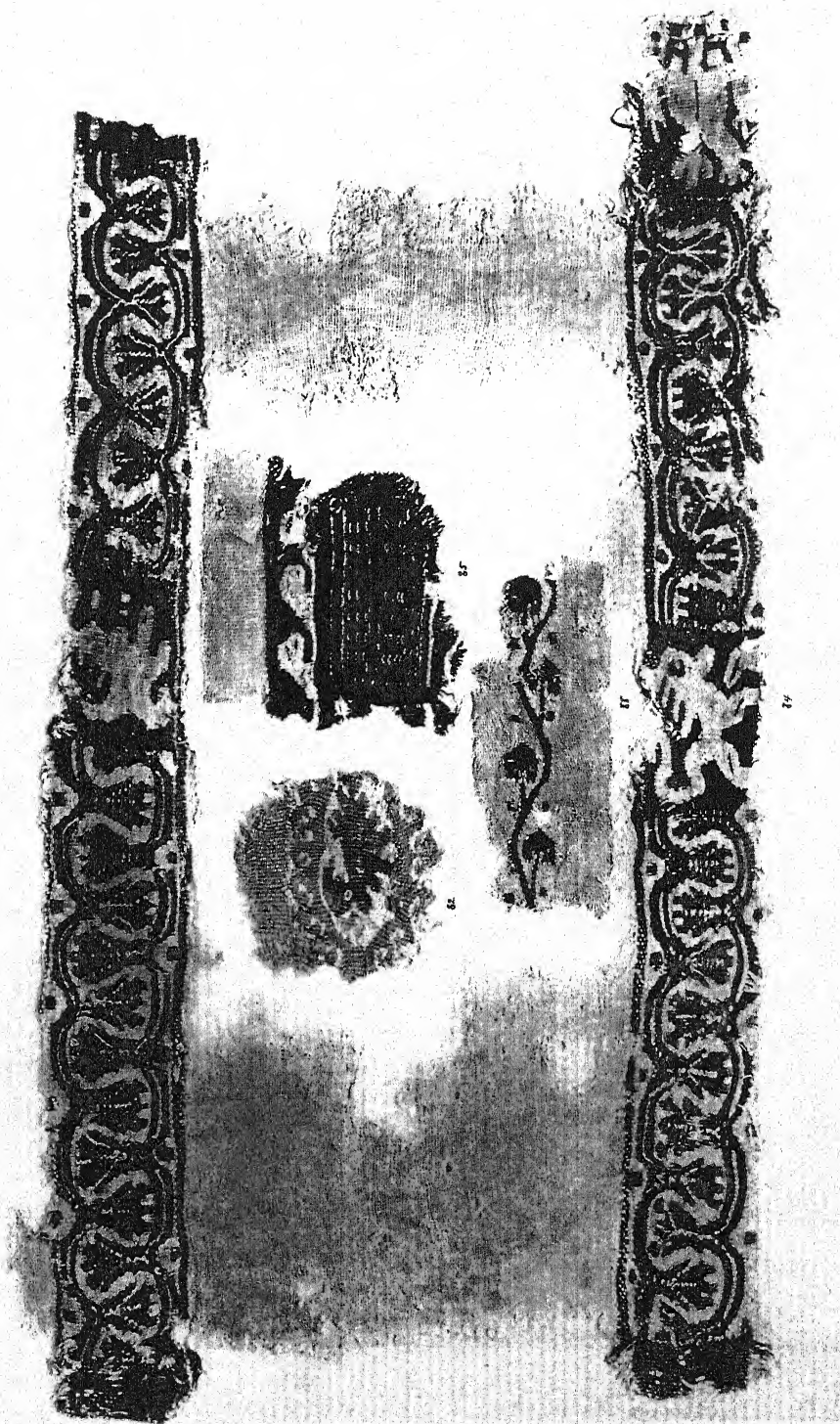
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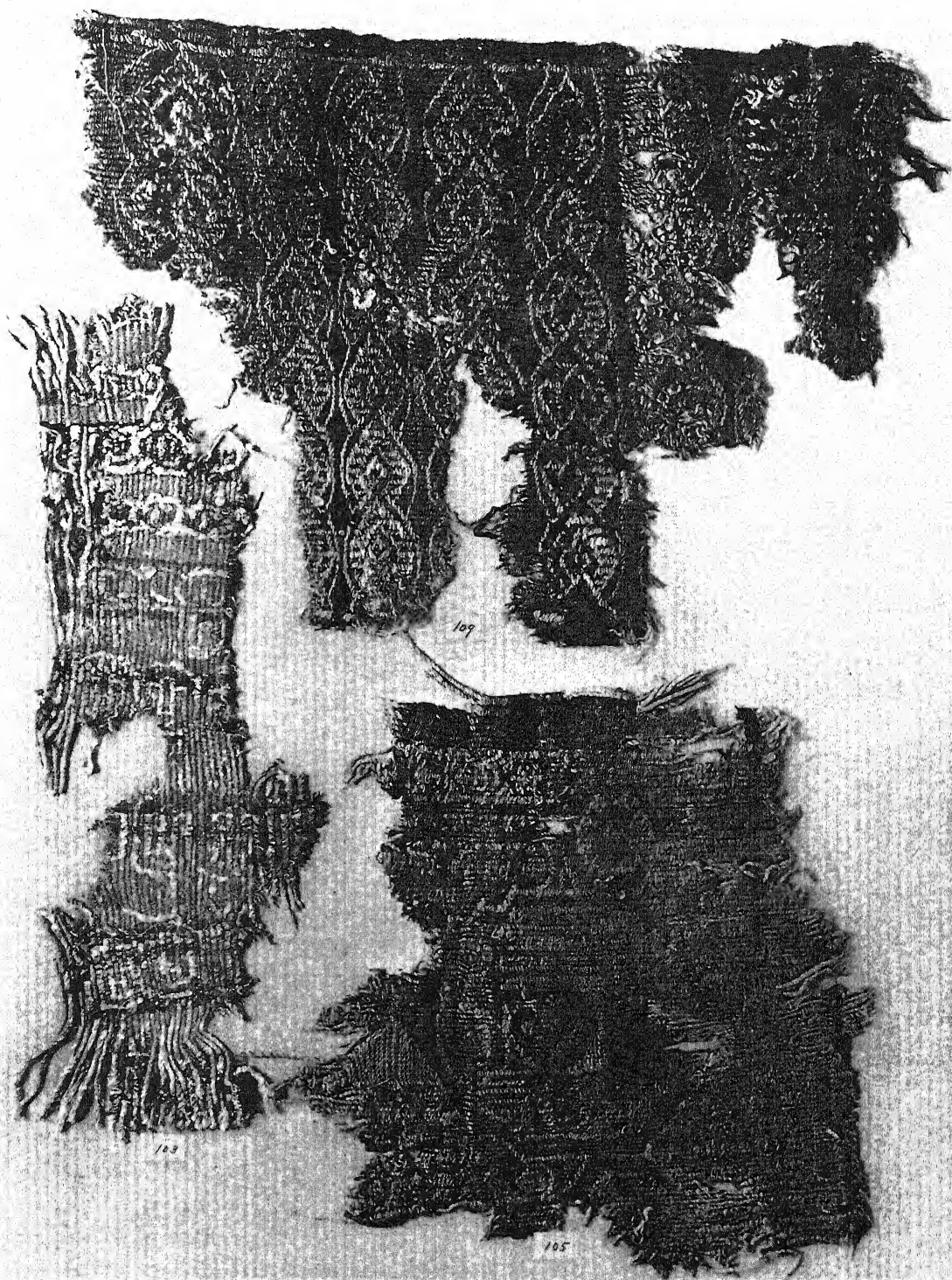
78. Tapestry stripes 83. Cloth with fancy stripes 86. Tapestry design

PLATE VIII



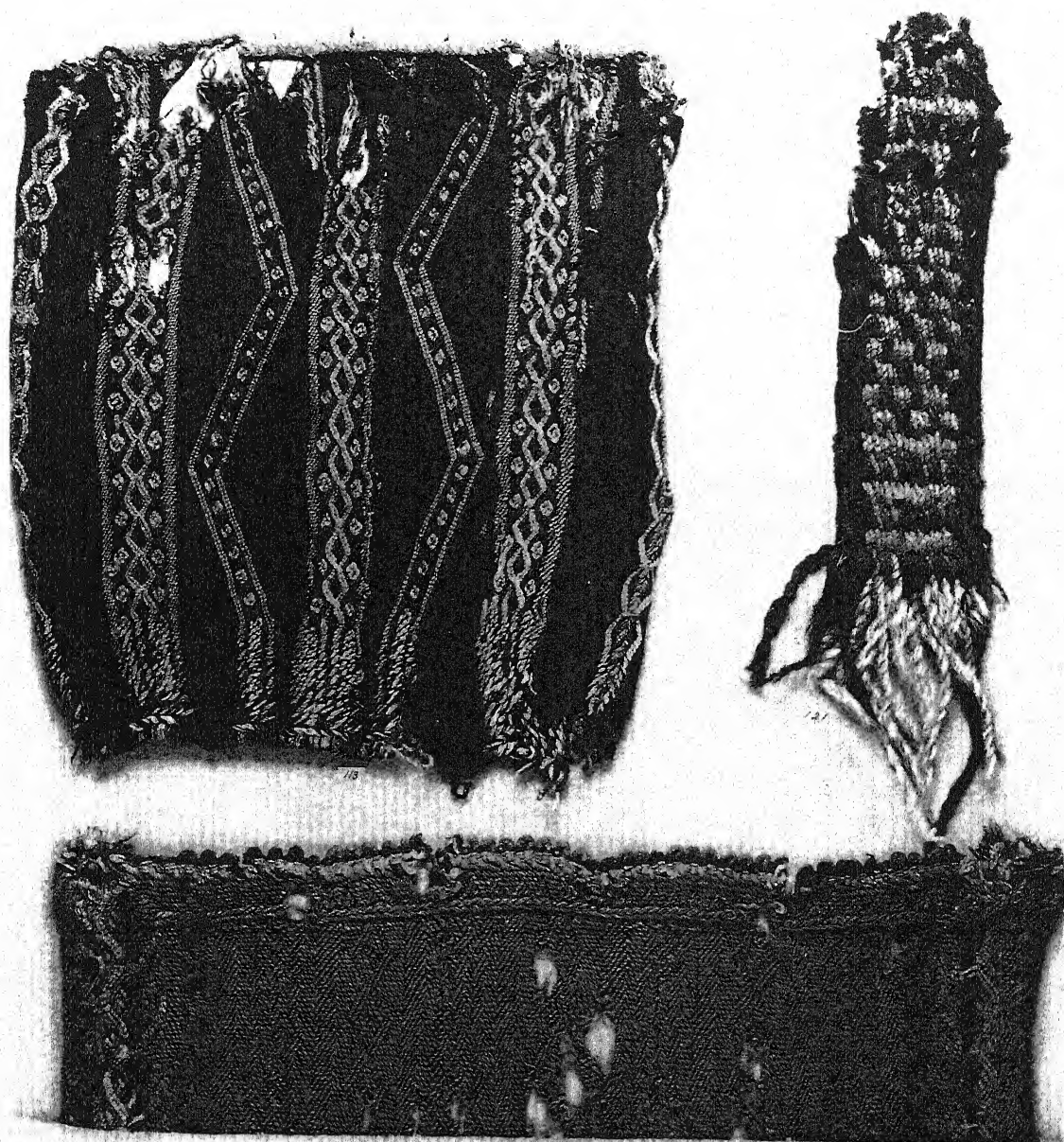
- 82. Tapestry oval enclosing an animal figure
- 84. Two tapestry bands; portion of a small tunic
- 85. Tapestry band; broken-line design
- 88. Tapestry design

PLATE IX



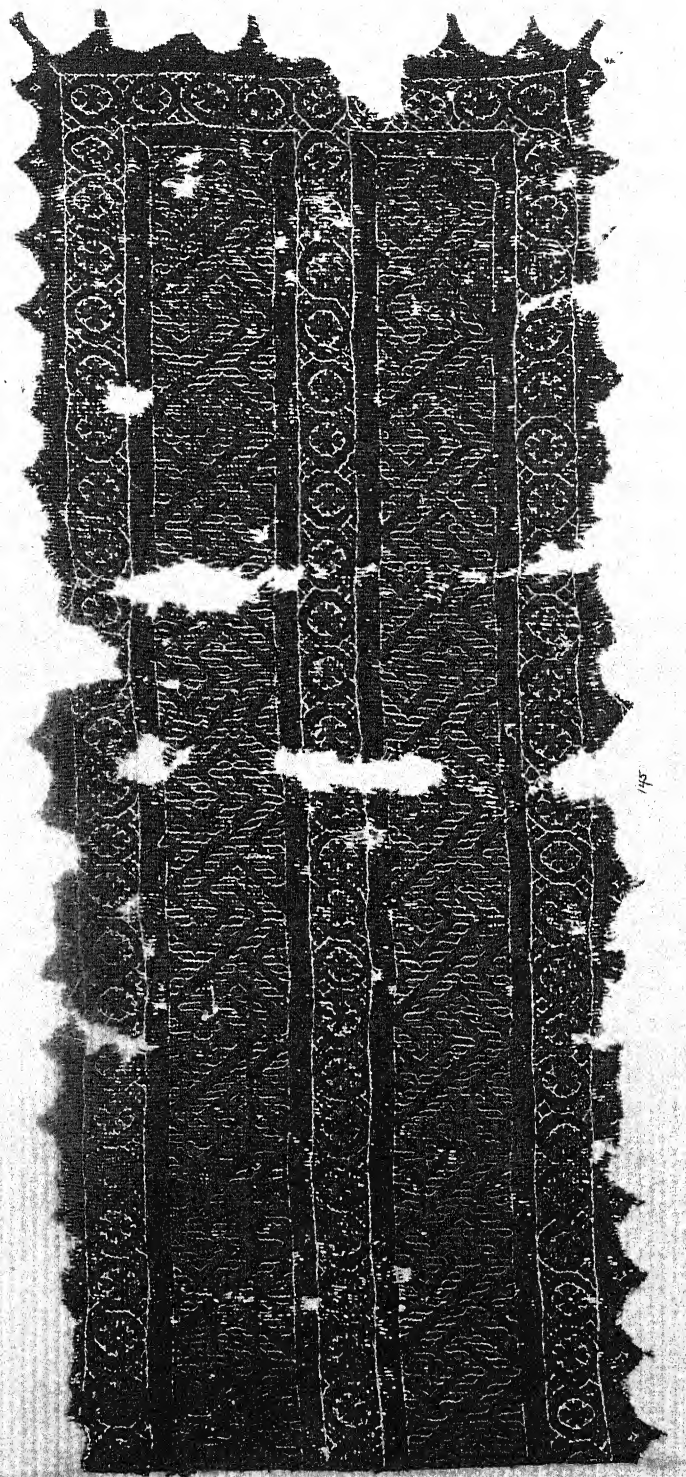
103, 105, 109. Heavy tapestries; overlaid designs

PLATE X



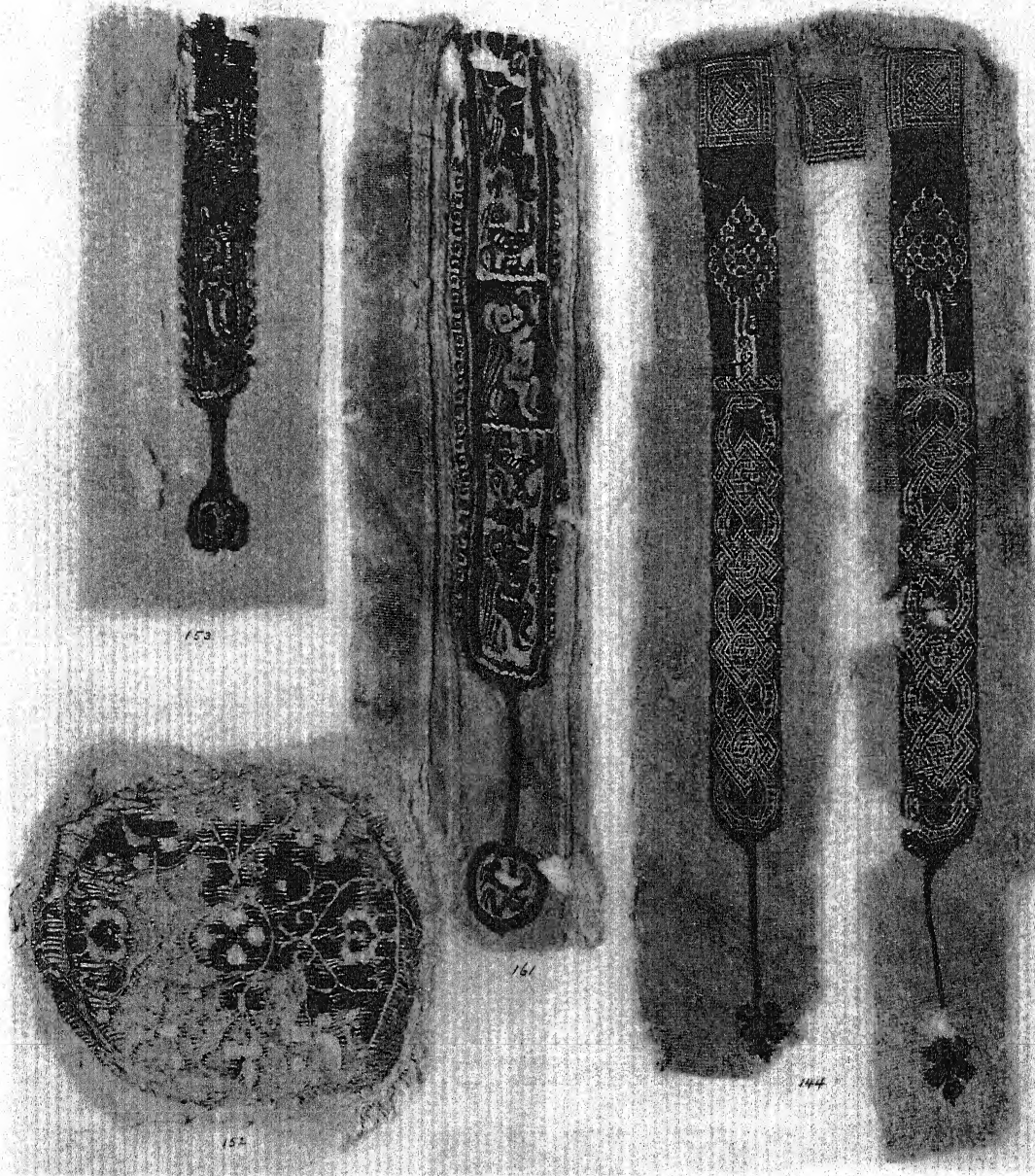
113. Knitted and embroidered bag 114. Top of a knitted bag showing knitted patterns
 121. Woven hair tassel

PLATE XI



145. Portion of a tapestry panel; overlaid design

PLATE XII



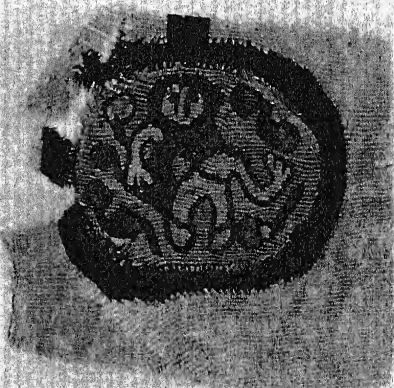
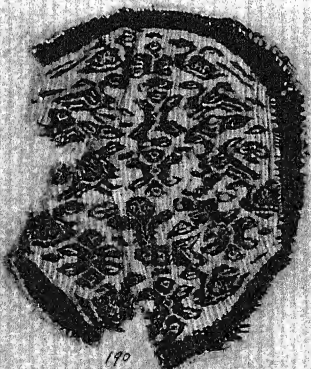
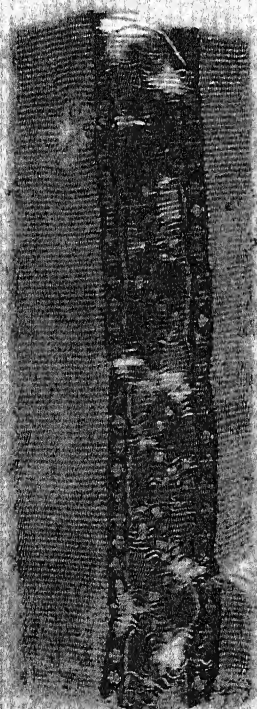
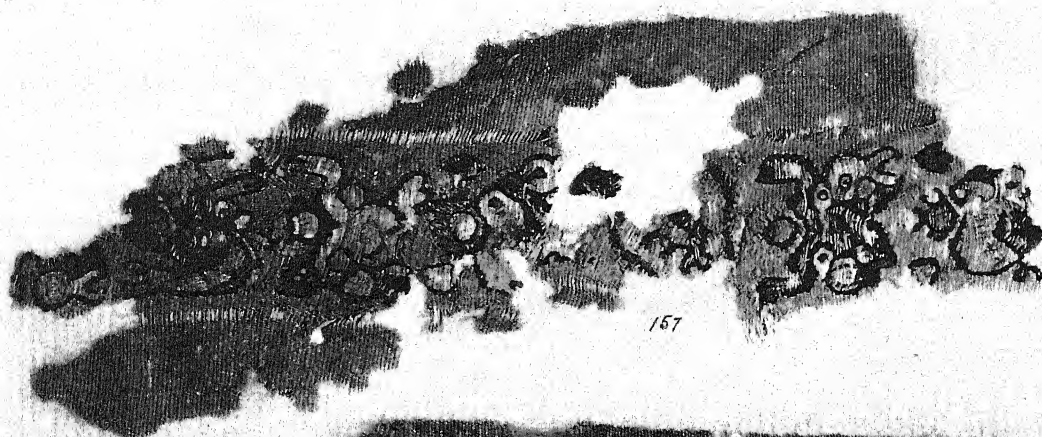
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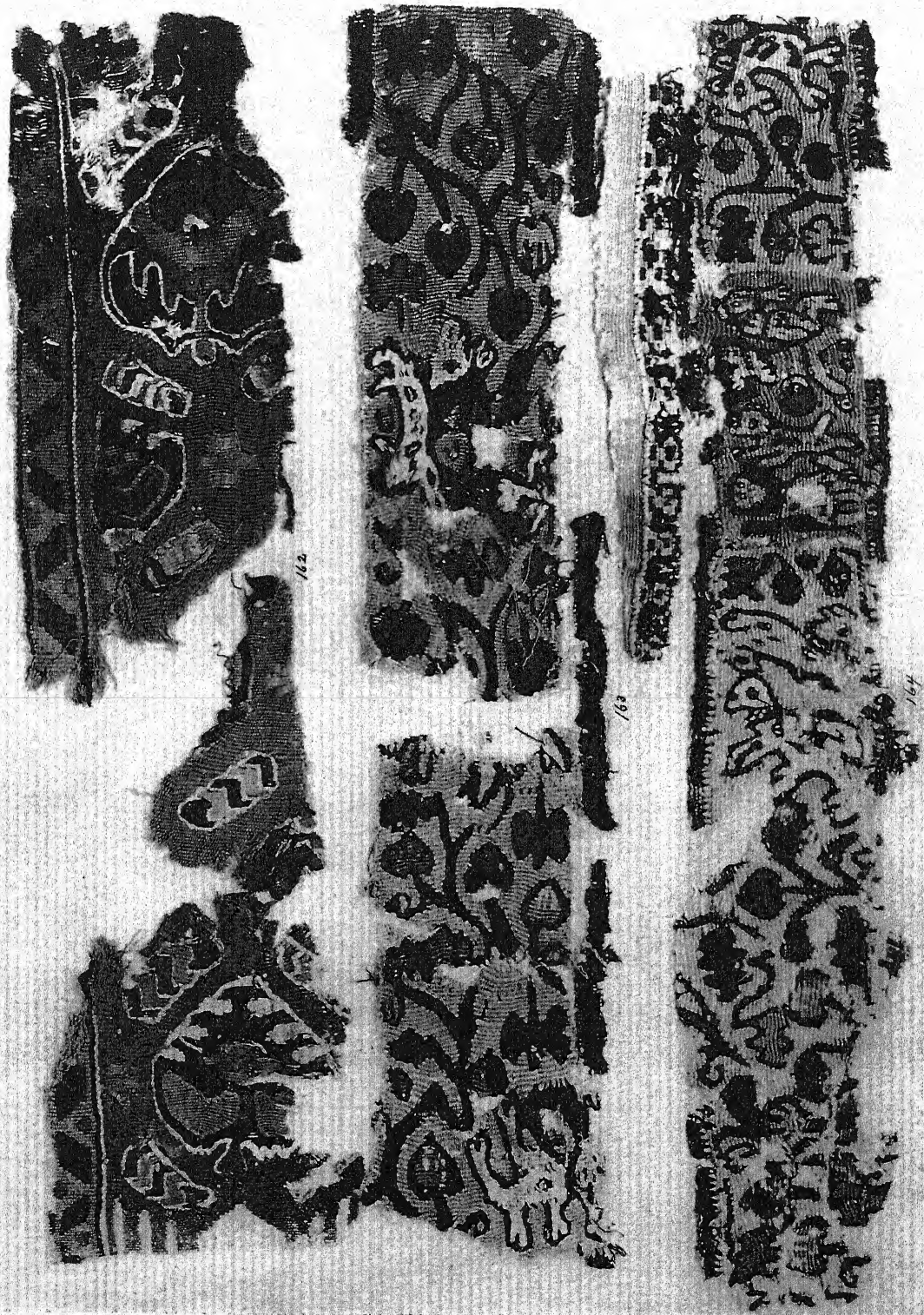
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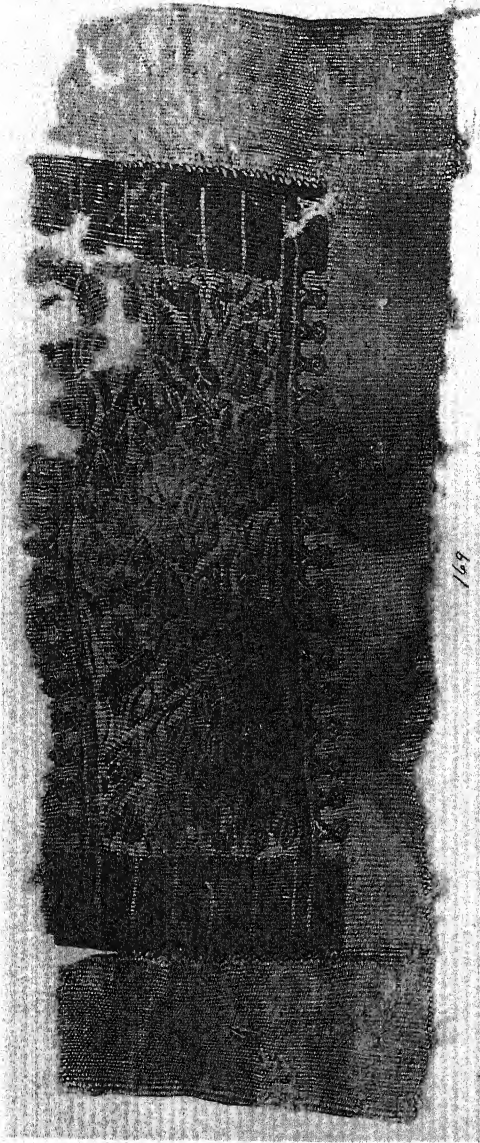
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PLATE XVI



162, 163, 164. Tapestry stripes

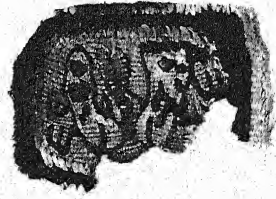
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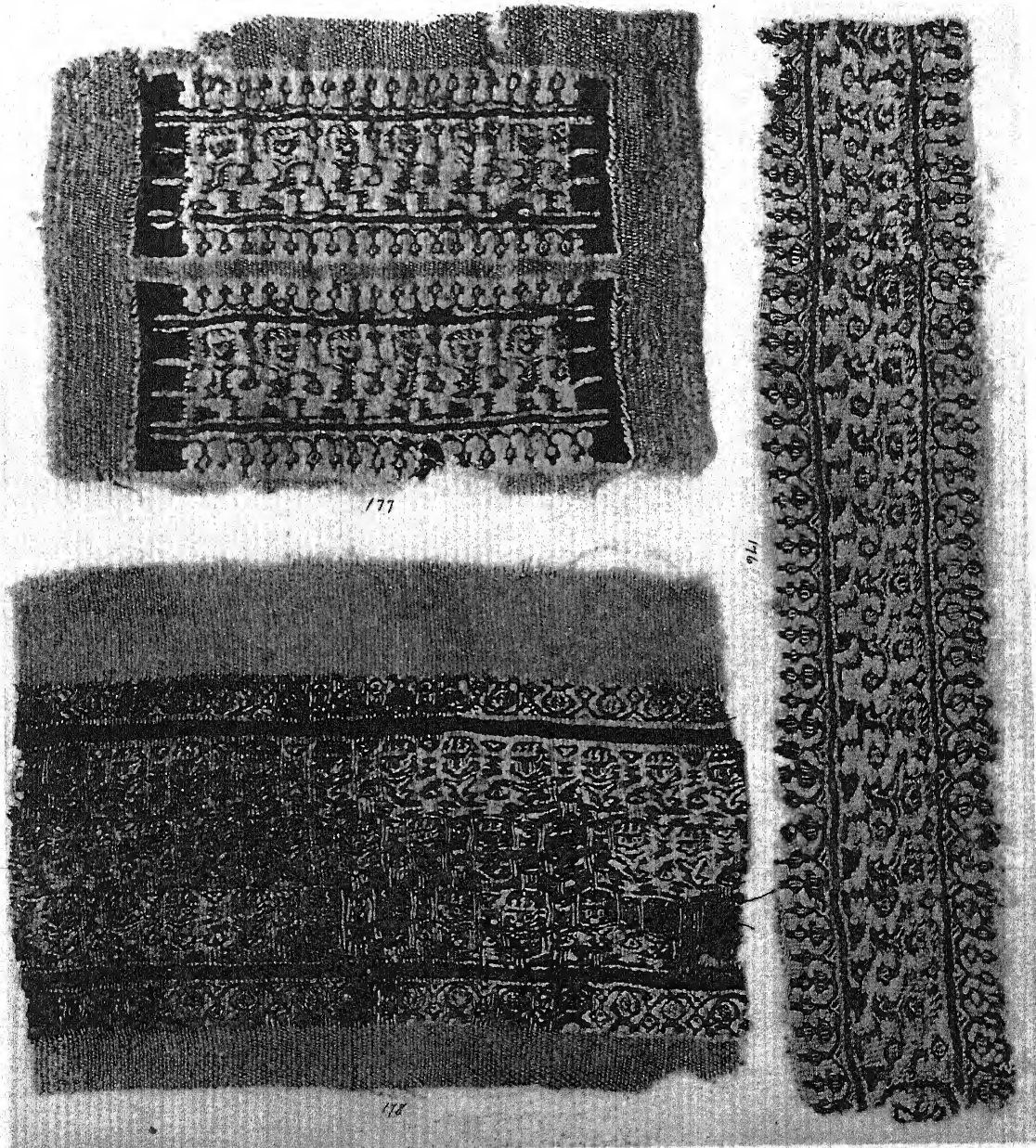
171



171

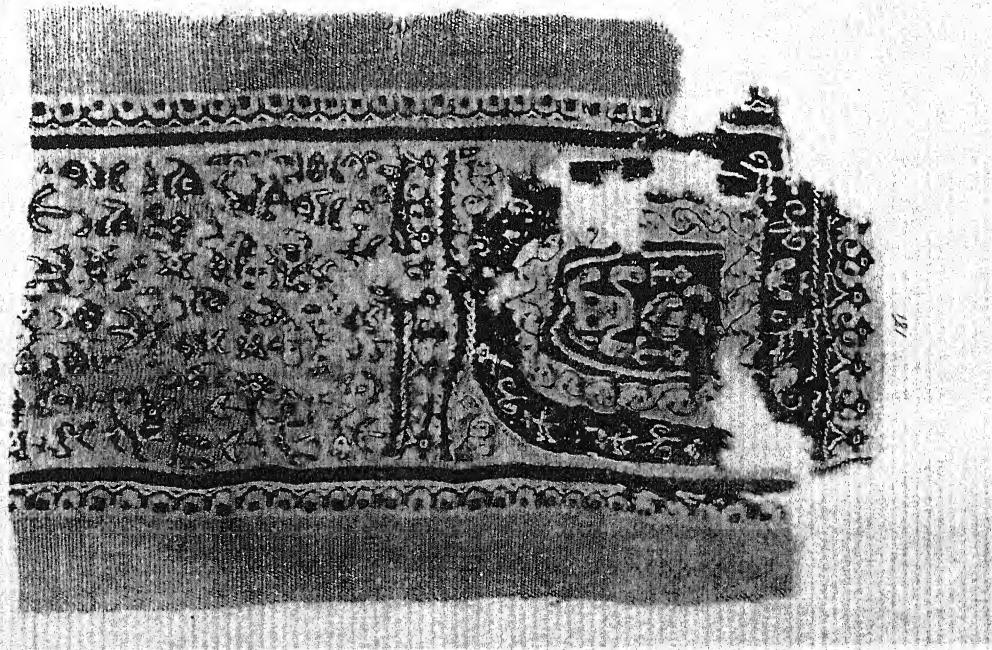
- 168. Tapestry inset
- 169. Tapestry band
- 171. Cloth with a tapestry inset and Coptic letters

PLATE XVIII

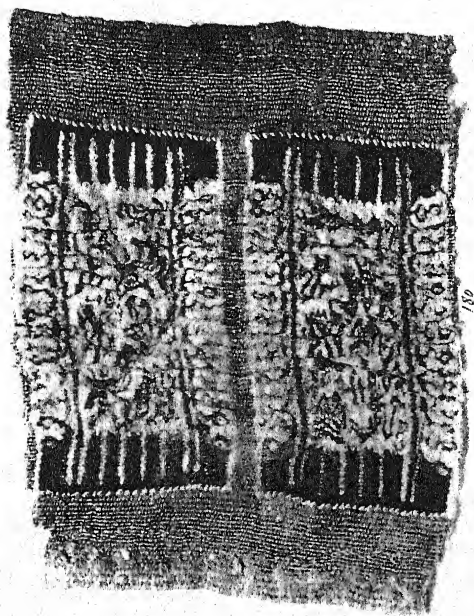


176, 178. Tapestry stripes 177. Two tapestry bands

PLATE XIX



179, 180. Tapestry bands



181. Portion of a tapestry stripe

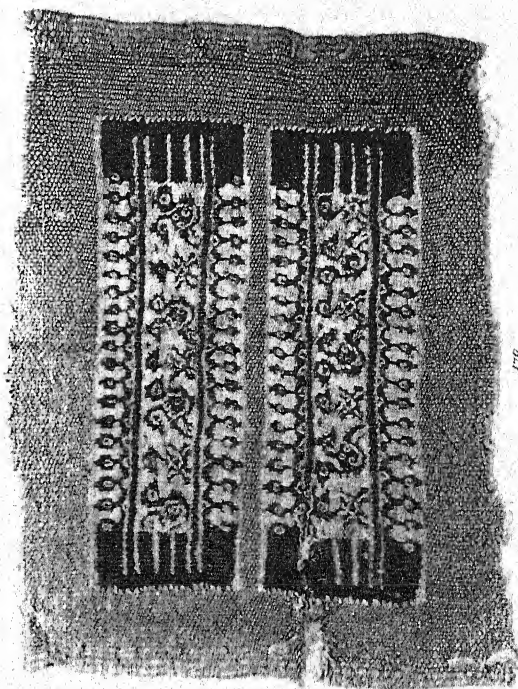
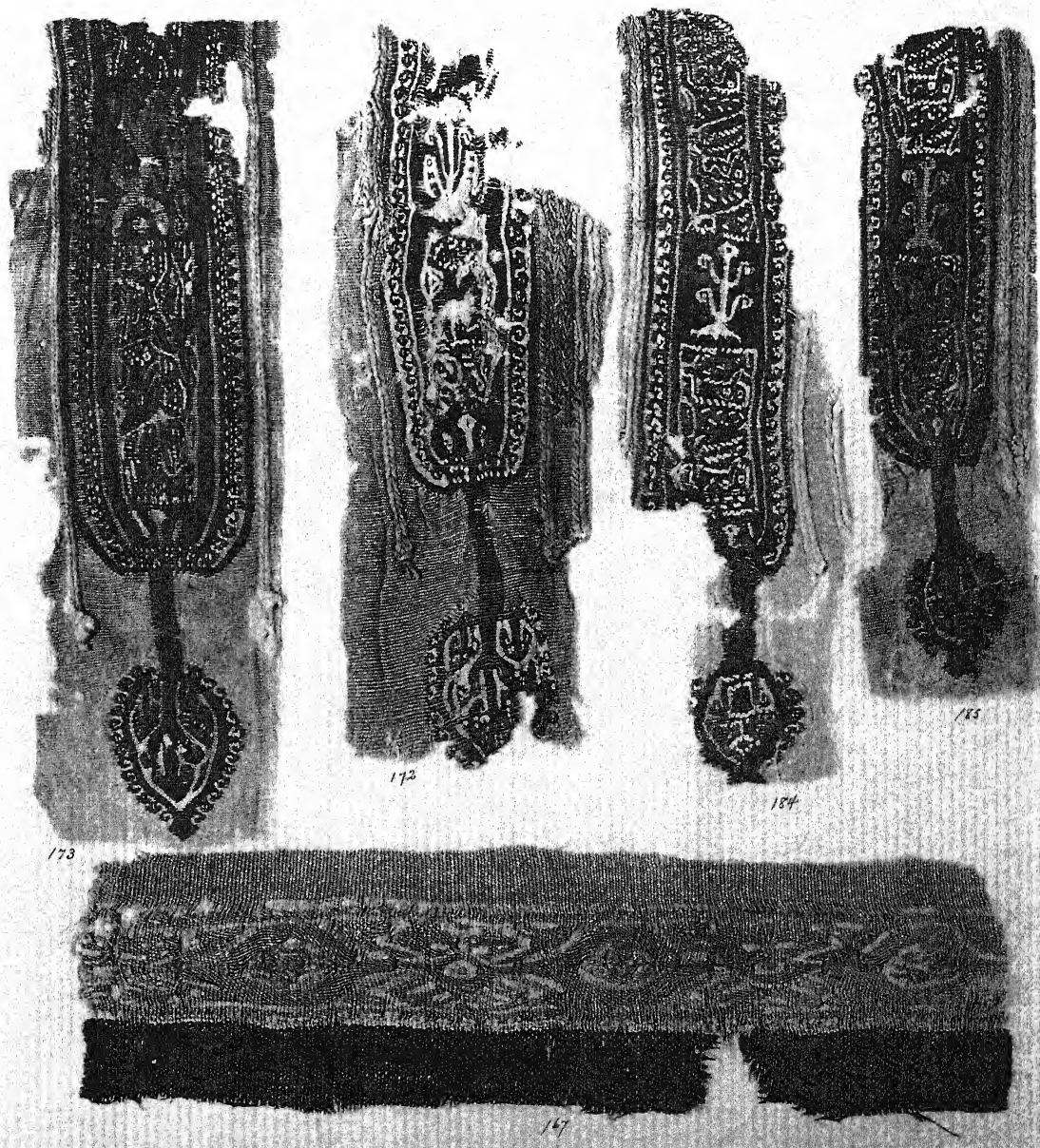


PLATE XX



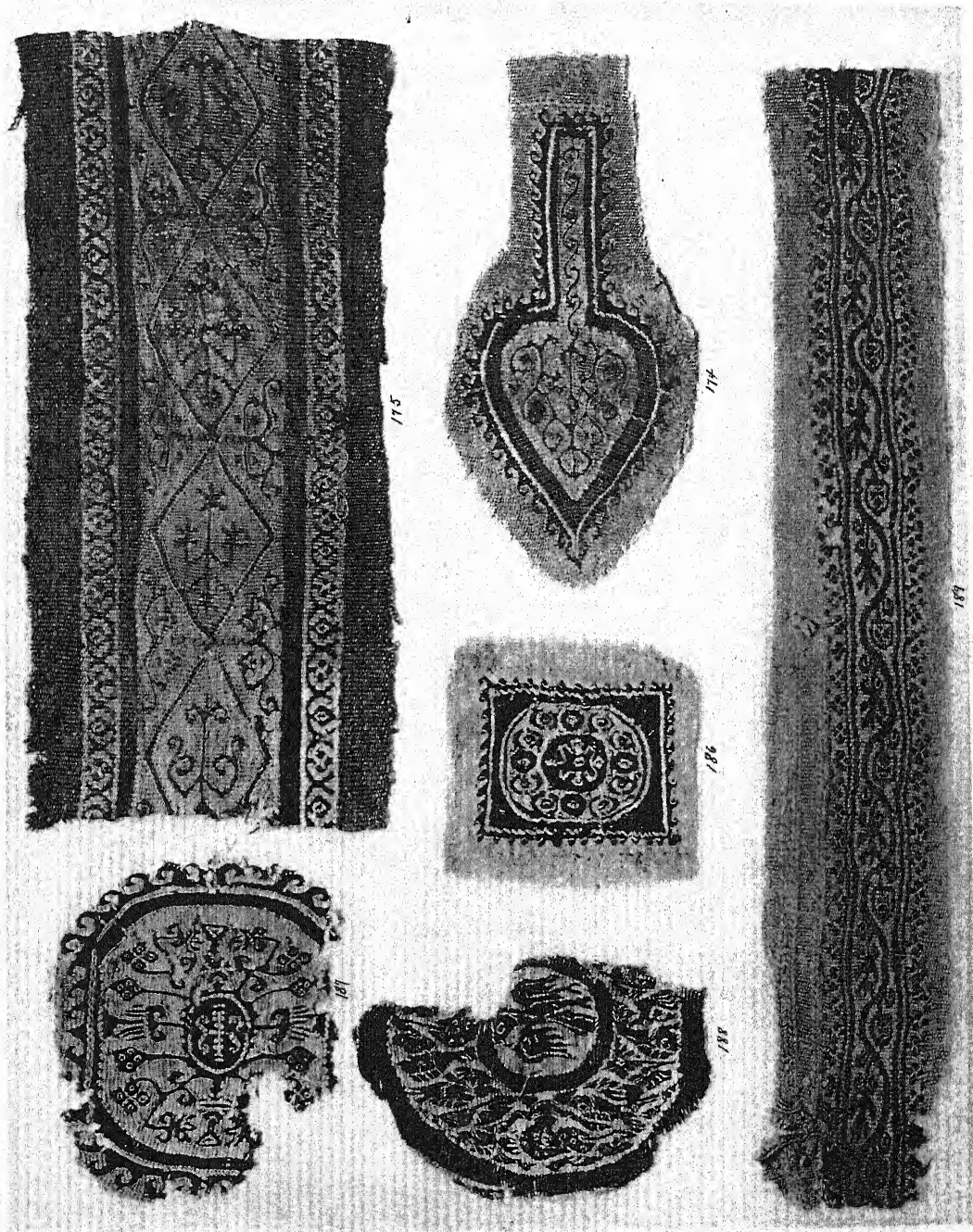
182, 183. Tapestry stripes, perhaps from a tunic

PLATE XXI



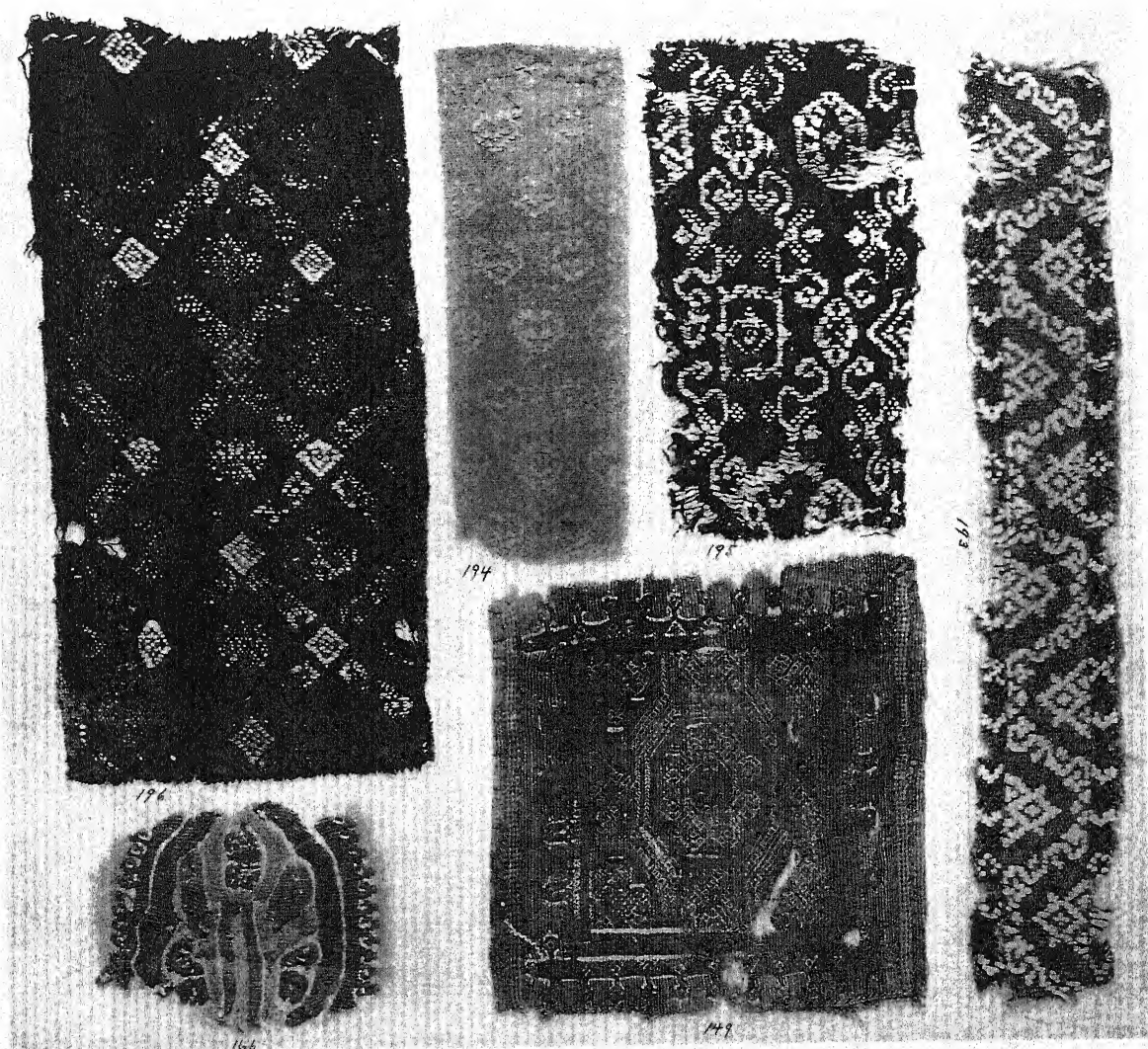
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PLATE XXIII



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196. Embroidered cloth

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